

JOURNAL OF

CALENDAR REFORM.

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Journal of CALENDAR REFORM

FIRST QUARTER

1939

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1939

PRESENT GREGORIAN CALENDAR

PROPOSED WORLD CALENDAR

In 1939 both calendars begin the year with Sunday, January 1st.

PRESENT GREGORIAN CALENDAR

FIRST QUARTER

	S	M	T	W	T	F	S
JAN	1	2	3	4	5	6	7
	8	9	10	11	12	13	14
	15	16	17	18	19	20	21
	22	23	24	25	26	27	28
	29	30	31				
FEB				1	2	3	4
	5	6	7	8	9	10	11
	12	13	14	15	16	17	18
	19	20	21	22	23	24	25
	26	27	28				
MAR				1	2	3	4
	5	6	7	8	9	10	11
	12	13	14	15	16	17	18
	19	20	21	22	23	24	25
	26	27	28	29	30	31	

90 days

THIRD QUARTER

	S	M	T	W	T	F	S
JUL							1
	2	3	4	5	6	7	8
	9	10	11	12	13	14	15
	16	17	18	19	20	21	22
	23	24	25	26	27	28	29
	30	31					
AUG			1	2	3	4	5
	6	7	8	9	10	11	12
	13	14	15	16	17	18	19
	20	21	22	23	24	25	26
	27	28	29	30	31		
SEP						1	2
	3	4	5	6	7	8	9
	10	11	12	13	14	15	16
	17	18	19	20	21	22	23
	24	25	26	27	28	29	30

92 days

SECOND QUARTER

	S	M	T	W	T	F	S
APR							1
	2	3	4	5	6	7	8
	9	10	11	12	13	14	15
	16	17	18	19	20	21	22
	23	24	25	26	27	28	29
	30						
MAY		1	2	3	4	5	6
	7	8	9	10	11	12	13
	14	15	16	17	18	19	20
	21	22	23	24	25	26	27
	28	29	30	31			
JUN					1	2	3
	4	5	6	7	8	9	10
	11	12	13	14	15	16	17
	18	19	20	21	22	23	24
	25	26	27	28	29	30	

91 days

FOURTH QUARTER

	S	M	T	W	T	F	S
OCT	1	2	3	4	5	6	7
	8	9	10	11	12	13	14
	15	16	17	18	19	20	21
	22	23	24	25	26	27	28
	29	30	31				
NOV				1	2	3	4
	5	6	7	8	9	10	11
	12	13	14	15	16	17	18
	19	20	21	22	23	24	25
	26	27	28	29	30		
DEC						1	2
	3	4	5	6	7	8	9
	10	11	12	13	14	15	16
	17	18	19	20	21	22	23
	24	25	26	27	28	29	30
	31						

92 days

This calendar has 52 weeks and must borrow one day from another week to complete the year. This causes the calendar to change every year and is responsible for its confusion. Also note varying number of days in each quarter.

PROPOSED WORLD CALENDAR

FIRST QUARTER

	S	M	T	W	T	F	S
JAN	1	2	3	4	5	6	7
	8	9	10	11	12	13	14
	15	16	17	18	19	20	21
	22	23	24	25	26	27	28
	29	30	31				
FEB				1	2	3	4
	5	6	7	8	9	10	11
	12	13	14	15	16	17	18
	19	20	21	22	23	24	25
	26	27	28	29	30		
MAR						1	2
	3	4	5	6	7	8	9
	10	11	12	13	14	15	16
	17	18	19	20	21	22	23
	24	25	26	27	28	29	30

91 days

THIRD QUARTER

	S	M	T	W	T	F	S
JUL	1	2	3	4	5	6	7
	8	9	10	11	12	13	14
	15	16	17	18	19	20	21
	22	23	24	25	26	27	28
	29	30	31				
AUG				1	2	3	4
	5	6	7	8	9	10	11
	12	13	14	15	16	17	18
	19	20	21	22	23	24	25
	26	27	28	29	30		
SEP						1	2
	3	4	5	6	7	8	9
	10	11	12	13	14	15	16
	17	18	19	20	21	22	23
	24	25	26	27	28	29	30

91 days

SECOND QUARTER

	S	M	T	W	T	F	S
APR	1	2	3	4	5	6	7
	8	9	10	11	12	13	14
	15	16	17	18	19	20	21
	22	23	24	25	26	27	28
	29	30	31				
MAY				1	2	3	4
	5	6	7	8	9	10	11
	12	13	14	15	16	17	18
	19	20	21	22	23	24	25
	26	27	28	29	30		
JUN						1	2
	3	4	5	6	7	8	9
	10	11	12	13	14	15	16
	17	18	19	20	21	22	23
	24	25	26	27	28	29	30
	**						

91 days

FOURTH QUARTER

	S	M	T	W	T	F	S
OCT	1	2	3	4	5	6	7
	8	9	10	11	12	13	14
	15	16	17	18	19	20	21
	22	23	24	25	26	27	28
	29	30	31				
NOV				1	2	3	4
	5	6	7	8	9	10	11
	12	13	14	15	16	17	18
	19	20	21	22	23	24	25
	26	27	28	29	30		
DEC						1	2
	3	4	5	6	7	8	9
	10	11	12	13	14	15	16
	17	18	19	20	21	22	23
	24	25	26	27	28	29	30
	*						

91 days

*YEAR-END DAY. December Y or 31, an extra Saturday, follows December 30th every year.
**LEAP-YEAR DAY. June L or 31, another extra Saturday, follows June 30th in leap years.

EACH YEAR DIFFERENT

This calendar is always different from year to year.

The quarters are unequal in length.

Each quarter begins and ends on a different day of the week.

Each month begins and ends on a different weekday.

The months have a varying number of weekdays.

Each year begins on a different weekday.

This calendar is unbalanced in structure, unstable in form, and irregular in arrangement.

SOON YOU WILL BE DISCARDING THIS OBSOLETE CALENDAR.

EACH YEAR THE SAME

This calendar bears no year-date and is good for every year.

The quarters are equal in length.

Each quarter begins on Sunday and ends on Saturday, contains 3 months—13 weeks—91 days.

Month dates always fall on the same weekdays.

Each month has 26 weekdays—plus Sundays.

Each year begins on Sunday.

This revised calendar is balanced in structure, perpetual in form, harmonius in arrangement.

SOON YOU WILL BE USING THIS UP-TO-DATE CALENDAR.

SÉNAT

—•—

Je rends un hommage respectueux et dévoué à Miss Elisabeth Achelis pour sa généreuse activité en faveur du Barreau Universel, c'est à dire de l'ordre à établir dans le Temps.

Si le comité français donne à son initiative une collaboration empressée et qui durera, avec ténacité, jusqu'au succès, c'est parce qu'il est convaincu qu'il y a une œuvre considérable à accomplir dont bénéficiera le monde entier. C'est aussi parce qu'il est heureux de prouver, par son concours sans réserve à une entreprise d'intérêt général américaine, son particulier attachement à tout idéal proposé par la grande démocratie de progrès des États Unis d'Amérique

Jurlin Godart

Paris 2 Février 1949



SENATOR JUSTIN GODART

(See Pages 3-5)

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LET US ENCOMPASS THE EARTH WITH A NEW ORDER OF TIME

VOL. IX FIRST QUARTER 1939 No. 1

AT the New York Museum of Science and Industry, in Rockefeller Center, an exhibit entitled "The Story of the Calendar" has just been opened to the public. It is a moving panorama of calendar history, that unfolds itself in a colorful setting of sky-blue and sunlight yellow.

The exhibit, which will remain on view throughout 1939, takes the form of continuously changing calendar displays, pictorial slides and historical texts. It reviews the history of time from the creation, when the day, season and year originated, and then leads the eye, through five calendar reforms, to The World Calendar—the calendar of tomorrow.

From man's earliest time-sense of day and night, through the period when he tried to base his calendar on the movements of the moon, to the Egyptian Solar Calendar of 4236 B. C., from which the present calendar is derived, the panorama moves swiftly and impressively onward to the Julian, Augustan and Constantinian changes. Then there is shown the reform of Pope Gregory XIII, which is in use today, concluding with the proposed World Calendar of equal quarters.

The story of the calendar, thus displayed, becomes real and vital. Everyone will want to visit this graphic presentation of the evolution of man's system of time-measurement. It is a living portrayal of civilization, a very human document, as it depicts man's various attempts to improve his annual time-piece.

Advocates of calendar reform will note with satisfaction that with each calendrical change the calendar steadily moves toward greater improvement until it culminates in the perpetual World Calendar. Here is offered a distinct contribution toward creating greater harmony among and within nations. Through the universal adoption of The World Calendar, man, ever seeking human, social and civil betterment, will go far to fulfill his age-long effort toward perfection.

THE EDITORS

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January, February, March
1939

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Editors: CHARLES D. MORRIS CHARLES C. SUTTER
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FRANCE URGES ACTION

By C. D. Morris

MEMBER of the Clemenceau cabinet during the war, Minister of Hygiene or of Labor several times, and delegate from France at Geneva, Senator Justin Godart enjoys in the French Parliament an influence of the greatest weight. He was charged in 1915 with the reorganization of the military health service, and since 1918 has accomplished admirable work on behalf of the French wounded.

Because his leadership has been national rather than partisan, and statesmanlike rather than political, his name has been mentioned of late as a possibility for the next Presidency of France, a post to which he would bring the influence of his close friendship with the head of the Senate, M. Jeanneney, President Chautemps and M. Georges Mandel. M. Godart is a Senator from the Rhone, and is the permanent delegate of France at the International Labor Office.

Long interested in the cause of calendar reform, he recently became the president of the French National Committee for the Reform of the Calendar. In a radio address from Geneva in June, 1937, he said:

"Permit me to point out briefly the advantages which The World Calendar will bring to civilization and the reasons for which, more and more, this project is accorded an intelligent adherence.

"A perpetual calendar of 12 months, identical every year, and always beginning on Sunday, will bring a stability and order for which we have great need in the yearly time-reckoning of today. In fact, the inconvenience of our present wandering calendar is the cause of innumerable confusions that instability always brings with it.

"The law and order which the new calendar institutes will bring certain advantages which will obviously benefit our daily life. In the business world, for example, it will be easier to compare, compute and study in a precise manner all monthly, quarterly and annual reports. Statisticians will no longer be obliged to resort to laborious and complicated adjustments to explain why the month of March in one year has a poorer percentage of business than the corresponding month of another year. The cause of these inconsistencies in the past has frequently been not poor business or faulty management, but the stupid and wholly unreasonable differences of the calendar.

"Universities and schools will be able, once and for all, to arrange their study schedules and to fix their vacation periods on as stable and practical a basis of time-taking as our clocks. Families and homes will rejoice at the easy planning and preparation of vacations and the joyful celebration

of national holidays. In the social world, engagement dates will be more easily made and remembered.

"The greatest advantage, perhaps, of all these things which will come from the new and perpetual calendar, lies in the fact that the various time-units such as the day, the week, the month and the season, will no longer pull away from each other in indescribable confusion, but will cooperate with each other in harmony and will constitute a complete synchronization. This perfect adjustment is the most characteristic trait of the new reform, which is thus assured of the support of all those who desire a greater unity, a better equality and a more perfect order in daily life.

"Calendar reform has been placed in the hands of the League of Nations, and the League's continuous activity should bring The World Calendar to a successful culmination. But to do this the League must have the cooperation of its states, member and non-member. That is why, when I address government delegates and public opinion which must influence them, I seek to convince all my hearers of the necessity of a prompt and favorable decision through an international conference to be called as soon as possible."

Senator Godart's leadership on behalf of calendar reform brings France into the forefront of all the nations which have been considering and advocating this cause. The new committee on calendar reform which he heads is the successor of the Bureau d'Etudes which sought to organize French opinion and support to the subject during the past eight years of League of Nations activity for a new system of time reckoning. It stems back much further, however, into the amazing calendar reform crusade carried out 50 years ago by the Astronomical Society of France under the leadership of M. Camille Flammarion. This Society, over a period of two or three years, carried out a prize contest for the most workable plan of calendar simplification, and eventually gave both its first and second awards to 12-month plans similar to that now known as The World Calendar. It rejected as impracticable all the 13-month proposals. A voluminous report on the Society's researches was made by its secretary, M. Phillippe Geringny, and the position then taken has been very largely accepted by French scholars and statesmen ever since.

On another page is reproduced an autograph letter from Senator Godart, transmitting to the Journal of Calendar Reform the portrait of himself which is published as a frontispiece to this issue. The letter says:

"I desire to pay a respectful and whole-hearted tribute to the generous activity displayed by Miss Elisabeth Achelis (President of the World Calendar Association) on behalf of The World Calendar; that is, her activity for the establishment of order in the reckoning of time. The reason why our French committee is warmly supporting this enterprise, and will

continue to do so until success is achieved, lies in our conviction that the task to be performed is an important one, and that the results will benefit the whole of mankind. We also welcome this opportunity of proving, by our unreserved participation in an American undertaking of general interest, our particular devotion to any ideal set up by the great progressive democracy of the United States of America.

JUSTIN GODART."

The Senate, Paris, February 2, 1939.

In the French Parliament, there have been for some time a substantial number of deputies and senators who have felt that some form of calendar simplification was inevitable, and that France should not lag behind other nations in giving the matter serious and thoughtful consideration. Yet leadership has hitherto been lacking—a lack which is now capably filled by Senator Godart's splendid assertion that "the task to be performed is an important one and that the results will benefit all mankind."

His activities answer an appeal that was published in the Paris *Temps* nearly eight years ago: "Among problems which have agitated us, consideration of the calendar has been largely neglected. Now and then some earnest soul has taken it up, but the task of remedying its defects has proved difficult. A dozen times the work has been started and abandoned, but this time there is a good possibility of carrying it through, for the cause has influential support in all civilized countries. We of France should give it sympathetic attention and understanding." Today, under Senator Godart's able leadership, France seems destined to lead the nations to this "inevitable goal."

ALMANAC OF THE FUTURE

LEXICOGRAPHERS define an almanac as "a list or table of days and months, with astronomical data and indications of feasts and holidays." The almanacs of the future, after the adoption of The World Calendar, will contain an arrangement of anniversaries that is continuously and conveniently uniform and perpetual.

Such an almanac, pre-visioning the conveniences of the future, has been prepared by P. W. Wilson, the eminent calendar authority, and has been printed for reference purposes by The World Calendar Association. It is a textbook of keen interest and high value to all students of calendar reform. The author has entitled it "The World Calendar Almanac."

Says Mr. Wilson in his preface: "I have tried to show the kind of perpetual almanac which is likely to be developed, containing the anniversaries of civil observance by the whole community and important historical events. The days of ecclesiastical observance by one or more religious communions are also shown. The civil or national anniversaries of general observance include birthdays of illustrious persons, great events and seasonal celebrations."

Copies of The World Calendar Almanac will be sent free, on request, by The World Calendar Association.

GIVE TIME A HELPING HAND

By ELISABETH ACHELIS

President of The World Calendar Association

An Article in *National Nature News*, January 2, 1939, An Educational Publication for Schools, Washington, D. C.

HAVE you ever thought why it is so difficult to figure our days and dates by the calendar when it is so easy to tell the time of day by the clock? We always know that the new day begins immediately after midnight, and the first hour thereafter is one o'clock in the morning of the new day. So, too, we know it is nine o'clock for school, that at noon at twelve o'clock nature's sun is at its height and that at about six o'clock in the evening the sun sets. Sun, Nature and Clock have a running partnership that works.

But this is not the case with the calendar. Who knows when the new year begins? True, it begins with January 1st, but on what weekday? Reason tells us it ought to begin on the first day of the week, but it doesn't. The year begins on any weekday it likes. But that is not our only trouble.

We do not even know, offhand, how many days the different months have in our calendar, the way we know how the hour has 60 minutes and each minute has 60 seconds. The hour is divided into equal quarter and half-hours, and there are twice twelve hours in our day. Our calendar is not nearly so simple.

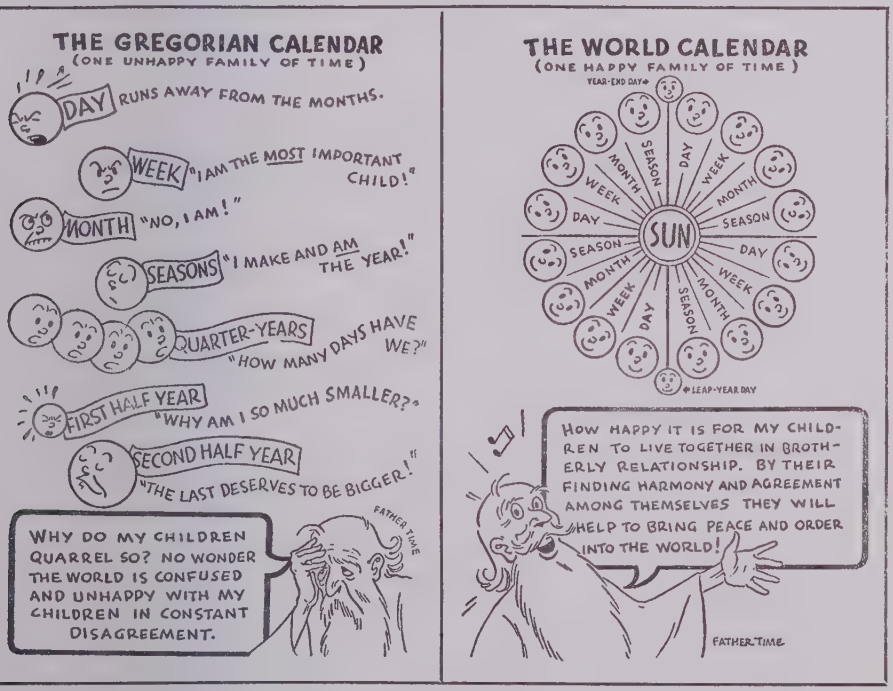
Do you realize that seven of our months have 31 days, four have 30 and February has only 28 or 29? To make matters even worse, there is no order in this arrangement. We usually tell the length of the months by repeating a little rhyme that we learn in our school-days beginning with "Thirty days hath September, April, June and November."

And that is by no means the end of our troubles. There are 14 different kinds of calendars and 28 different types of months that we use in the telling of our year-time. And to make matters still more confusing, these, too, do not follow each other in any ordered manner. It is as if we were plunging our hands blindly in a grab-bag and drawing out a type of calendar that is number one or twelve or seven or four. That is one of the reasons why businesses and banks use such long and cumbersome sheets of numbers, and why our schools have to change their study schedules and vacation dates year after year. Our disordered calendar brings many unnecessary difficulties. You can never compare one calendar year with another.

Now you wonder, as many other people wonder, why our clumsy calendar has not been changed long ago and arranged as simply and ac-

curately as our clock-time. People have been trying to do that for ages.

There have been five calendar changes in the past. The first was the Egyptian. They discarded the moon and accepted the sun as the basis on which to build a good regular calendar. They did this because the



GIVE FATHER TIME A HELPING HAND

Cartoon published by the National Nature News to illustrate to school readers the inequalities of the calendar.

Sun influences nature's seasons, and the seasons, as we know, are vitally important for the planting, growing and ripening of our food. The Egyptians made up an excellent calendar. It had 12 months of 30 days each, with five days left over at the end of every year for a holiday period. You know our calendar must have 365 days and a fractional day (365.2422 to be exact) because it takes our earth that many days to complete one trip around the sun.

When Julius Caesar conquered Egypt he liked their calendar so well that he decided to adopt it (with a few improvements) for the Romans. He kept the 12 months but distributed the five-day holiday period more

evenly throughout the year. He introduced the leap-year idea to take care of the accumulated fractional day, so that every fourth year had an extra day. Both the Egyptian and Julian calendars had no weeks. Because they had no weeks the calendar was every year the same. Then Augustus, his successor, further reformed the calendar by correcting the leap-year rule so that the calendar agreed more accurately with the seasons.

Under the first Christian Emperor, Constantine the Great, the calendar was provided with a week of seven days as we now use. With the introduction of the seven-day week, the calendar began to wander from its smooth course because 52 times seven make only 364 days. This forced the calendar to take into its year one day of another week, so that our calendar year has 52 weeks plus one day. In the new World Calendar we just call that extra day of another week, the Year-End Day, an extra Saturday, a holiday. Then Sunday comes on January 1st just as it did at the beginning of the year so that every year is the same, as were the old Egyptian and Roman calendars.

The fifth reform was adopted a comparatively short time ago. Pope Gregory XIII discovered that once more the leap-year rule did not agree with the seasonal changes in the year so that the real spring came ten days ahead of the official spring date in the calendar. So Pope Gregory, with his advisers, corrected our year so that the spring date would always come on March 21st, on the same day with nature's spring. To do this ten days were dropped right out of the calendar that year. Imagine, if you can, that today you are spending Thursday, October 4th, and that tomorrow, Friday, you suddenly find it is October 15th. That is what happened in 1582, ninety years after Columbus discovered America.

Naturally the reform was immediately adopted by the Catholic countries. Many Protestant countries, however, were reluctant to make the change. This was rather stupid on their part as the calendar, which is a scientific, mathematical and civil affair, has nothing to do with religious beliefs. But some nations could not quite see it that way. It took many years before the world generally accepted the Gregorian reform. England with America adopted it in 1752; Greece not until 15 years ago.

Today I believe nations are wiser. They will more readily accept a calendar which better fits in with our modern life and age. The new World Calendar is built on the equal-quarter division of a 12-month year. This calendar can be easily divided into equal quarters and halves just as our hour is divided into quarters and halves. And like our clocks it will be unchangeable—each year the same—because it has that Year-End Day I have indicated.

Another valuable and important feature of The World Calendar is that it is built on-the-square, somewhat as Nature is fashioned on the

four-fold idea. The four quarter divisions of the new World Calendar correspond to the four seasons in Nature. We also find in Nature the four winds, and there are four principal directions of the compass. Thus The World Calendar is in agreement with Nature, and *"Partnership with Nature Pays."* Now let us see what this will mean to us.

If your school is like so many in America, it will probably begin its fall term on Tuesday, the day after Labor Day. In the past we never knew without looking it up on what date this would be because Labor Day has a habit of wandering all over the first seven days in September. In the new World Calendar, Labor Day comes on September 4th and is always the same Monday each year. School, then, begins regularly on the following day, September 5th.

The usual school term is about 20 weeks with mid-term examinations coming at the 10-week break. Twenty weeks from September 5th (not including the Christmas week) under The World Calendar starts the new term always on January 31st. The next term of 20 weeks would end June 19th, closing the term on Friday, June 15th. This would give 11 full weeks of vacation. When we use The World Calendar you will never have to be reminded that you are not going to school on June 19th. In all probability you will be out-of-doors enjoying Nature's beauty and studying her wonderful ways. What a joy it will be after 20 long weeks at school to lie in the sun, play, listen to the birds, watch the many animals and insects, and observe how the flowers and trees grow.

While we are talking about the first of the month there is another handy thing about this new World Calendar—easy to remember. The first month in every quarter begins on a Sunday, the second month in any quarter always begins on a Wednesday and the last month in the quarter has Friday for the first day. How simple this is! You don't have to be a genius at arithmetic to figure this out.

Now we are all agreed, I am sure that we ought to have this new calendar, but how and when are we going to change from the old to the new? What are people all over the world doing about it?

Fourteen different nations have already said they will use The World Calendar. What is needed is for some nation to start the ball rolling.

Don't you think it would be a fine idea for a great country like ours to set the world an example? We have always been proud of the way we have advanced modern ideas and up-to-date ways of living. And we can be just as proud of making our year as natural and simple as our clock.

Here is something for which boys and girls can band together and work; be real pioneers to improve the calendar and be part of a great international movement. When countries agree on things, they do not quarrel and wars are avoided. A sensible and up-to-date calendar is one thing upon which all countries can agree. It will bring us closer to peace on earth and good-will toward men.

AUGUSTAN MYTHS

By Roscoe Lamont

(From an article, "The Roman Calendar and Its Reformation by Julius Caesar," published i *Popular Astronomy,* November, 1919)

FOR nearly a hundred years the *Encyclopedia Britannica* printed the following statement in its article on the Calendar, an article written by Thomas Galloway for the seventh edition published about 1830 and republished in several succeeding editions:

In the distribution of the days through the several months Caesar adopted a simpler and more commodious arrangement than that which has since prevailed. He had ordered that the first, third, fifth, seventh, ninth and eleventh months, that is January, March, May, July, September and November, should have each 31 days, and the other months 30, excepting February, which in common years should have only 29, but every fourth year 30 days. This order was interrupted to gratify the vanity of Augustus, by giving the month bearing his name as many days as July, which was named after the first Caesar. A day was accordingly taken from February and given to August; and in order that three months of 31 days might not come together, September and November were reduced to 30 days, and 31 given to October and December. For so frivolous a reason was the regulation of Caesar abandoned, and a capricious arrangement introduced, which it requires some attention to remember.

But according to the statement of Censorinus and Macrobius, who tell exactly what Julius Caesar did, there is no truth in it whatever. Many ancient Roman calendars have also been discovered which are shown in the Corpus of Latin Inscriptions. The earliest one, according to Mommsen, dates from the years 723-724 of Rome (31-30 B.C.), and the month following July has 31 days. This date was more than 20 years before the name Sextilis was changed to Augustus. While this early calendar is incomplete, containing only the last part of some of the months, from the names of the festivals placed opposite the days the months represented can be determined.

Censorinus, in his book *The Natal Day,* written to celebrate the birthday of his friend Cerellius, after discussing a variety of subjects, such as the opinions of the ancient philosophers on the age of the human race, why twins are sometimes born, the distances of the stars, and the music of the spheres, gives a history of the Roman calendar, explaining the manner of making the civil and solar years correspond by means of the intercalary month, and speaks as follows of the confusion into which the calendar had fallen and of the reform of Caesar:

The pontiffs were charged with making the intercalation, but most of them, on account of enmity or friendship, shortened or lengthened the term of a magistrate, and intercalating more or less according to their pleasure, caused a farmer of the revenue to gain or lose according to the length of the year, thus making worse what was given to them to correct. The disorder was so great that Caius Caesar, chief pontiff, in his third consulate and that of M. Aemilius Lepidus, corrected former abuses by placing

two intercalary months of 67 days between November and December, although he had already intercalated 23 days in the month of February, thus giving to that year 445 days. At the same time, to prevent a like error from occurring in the future, he abandoned the intercalary month and regulated the civil year by the course of the sun, adding 10 days to the former 355, so distributed among the seven months having 29 days that two days were added to January, Sextilis and December and one to each of the others, and he placed these days at the ends of the months in order that the religious festivals might remain in their former places. . . . As to the quarter of a day which it seems completes the true year, he directed that one day be intercalated, after each period of four years, where the month was formerly placed, that is, after Terminalia (February 23rd), which is now called bissextile day. From this year, thus regulated by Julius Caesar, those down to our time are called Julian, and they began at the fourth consulate of Caesar.

Macrobius, in his work, *Saturnalia*, after giving a long history of the Roman calendar, describes the Julian reform:

Julius Caesar added 10 days to the former number in order to complete the 365 days which the sun takes to pass through the zodiac; and to take account of the quarter of a day, he directed the pontiffs, who were entrusted with the months and days, to intercalate one day every four years in the same month and in the same place the ancients had intercalated, that is, before the last five days of February, hence this day was called bissextile. The 10 days added were distributed in such a way that January, Sextilis and December received two days, April, June, September and November one only. He added nothing to February in order that the religious rites in honor of the gods of the nether world might not be changed. March, May, Quintilis and October remained as they were, their 31 days being a sufficient number, though they had their nones on the seventh as Numa had ordered, Caesar not having changed this arrangement. January, Sextilis and December, to which Caesar added two days, although after Caesar they began to have 31 days, still had their nones on the fifth, 19 days being counted from the ides to the calends of the following month.

According to these extracts from the writings of Censorinus and Macrobius, all the months, after the Julian reform, *had the same number of days they have today* * , and the statements of Mr. Galloway in the *Britannica* are wholly in error. Statements similar to those in the *Britannica* are found in a work by John Brady, published in London in 1812, entitled, *Clavis Calendaria* or a Compendious Analysis of the Calendar, but it is probable that Mr. Galloway obtained his information from Sacro Bosco, an Englishman of the 13th century, who wrote a book called *De anni ratione*, which he states was written in the year 1232, Mr. Galloway making a reference to this book. An edition of this work, which is in Latin, was published in Antwerp in 1551, and the part relating to the reform of the calendar by Julius Caesar is as follows:

Julius Caesar distributed the days among the months so that the odd months had 31 days and the even ones 30; but when he came to January, the last odd month, one day was lacking. He therefore subtracted one day from February to complete the number for January, which February recovered in the bissextile year. Also in the time of Julius Caesar, the Romans, flattering him, gave the name Julius to the month which before was called Quintilis, because he was born in that time. Likewise in the time of Augustus the month which before was called Sextilis they named Augustus.

*EDITOR'S NOTE: This fact is prominently mentioned in the recently opened exhibit "The Story of the Calendar" sponsored by The World Calendar Association, on view the entire year at the New York Museum of Science and Industry, in Rockefeller Center.

But then Augustus, envious because his month was shorter than the month Julius, stole one day from February and added it to Augustus (August), hence February remained with 28 days. Another inconvenience resulted, three months of 31 days coming together, namely, July, August and September. He therefore took one day from September and assigned it to October, and likewise one day from November which he added to December. And this disposition of the months and arrangement of the number of days, which it will be allowed was reprehensible, the Church uses even today.*

If a change such as he describes was really made, everybody no doubt would allow that it was reprehensible. What Mr. Galloway says is simply a good translation from Sacro Bosco's work, and the question is, where did Sacro Bosco get his information? He gives no authority for any of his statements, which are altogether different from anything the Roman writers say, and if he merely gave the arrangement he thought Julius Caesar ought to have made, as seems probable, with a theory as to how that arrangement came to be disturbed, his statements being given a wide circulation by the *Britannica* and reproduced in many other works on the calendar, there would seem to be a good deal of truth in the saying of Voltaire, that history is fable agreed upon.

In 1866 Lepsius discovered at Tanis, Egypt, a stone on which there was a long inscription in the Egyptian and the Greek language. This stone is known as the Tanis or Canopus stone, a cast of which is in the National Museum at Washington, and the inscription was found to contain a decree establishing a new calendar in Egypt in the year 238 B. C., a translation of this part of the writing, as made by Budge, being as follows:

And in order that it may happen that that which hath been decreed to be done at each season of the year may be done in accordance with the position which the heavens have with reference to the things which have to be performed at the present time, so that occasion may not be given and the case may not arise that some of the festivals which are celebrated in Egypt in the winter should come to be observed in the summer, in consequence of the rising of Sirius advancing one day every four years, and on the other hand some of the festivals which are at the present time celebrated in the summer should come in the future to be celebrated in the winter, a thing which actually happened in the times which are past, and would happen at the present time if the year consisted of 360 days and the 5 days according to the directions for adding the additional days which have been observed: from this time onwards one day, a festival of the Good-doing Gods, shall be added every four years to the five additional days which come before the new year, so that it may happen that every man shall know that the small amount of time which was lacking in the arrangement of the seasons and of the year and in the things which passed as laws for the knowledge of their movements hath been corrected, and that it hath been supplied by the Good-doing Gods.

This calendar is identical with the Julian, except as to the number of days in the months, and it required, therefore, no great skill on Caesar's

*Bosco's belief was that before the Julian reform the year, beginning with March, consisted of 354 days, the months having alternately 29 and 30 days; that 11 days were added by Caesar, two days being given to five of the months containing 29 days, beginning with March, and there being only one day left to give to January, in order to make up its number 31, February was reduced to 29 days.

part to establish the reformed Roman calendar, since one with the same length of the year and the same method of intercalation had been established in Egypt nearly 200 years before, and cut on a stone seven feet high. Dio Cassius, in his *History of Rome,* says that "he got this improvement from his stay in Alexandria," and the astronomer Sosigenes, coming from Egypt, executed the work. This makes it somewhat amusing to read in Anthon's *Classical Dictionary*:

> When we consider the imperfections of all mathematical instruments in the time of Caesar and the total want of telescopes, we cannot but view with admiration, not unmixed with astonishment, that comprehensive genius which, in the infancy of science, could surmount such difficulties and arrange a system that experienced but a trifling derangement in the course of sixteen centuries.

Julius Caesar did not live to see that the calendar got safely started on its course, he having been assassinated in the year 44 B. C., and the pontiffs, through a misunderstanding or by design, made every third year a leap year instead of every fourth. This continued until there had been 12 leap years where there should have been but nine, and to make the proper correction Augustus ordered the omission of intercalations during the next 12 years [8 B.C. to 8 A.D.; Dr. J. K. Fotheringham, *Nautical Almanac,* London, Eng., 1935] thus cancelling the former error.

Macrobius makes the following statements with regard to changing the names of the months Quintilis and Sextilis to July and August.

> Quintilis, by a law proposed by the consul Marcus Antonius, son of Marcus, was called Julius (July) in honor of the dictator Julius Caesar who was born the fourth of the ides of this month.
>
> August, which was formerly called Sextilis, was afterwards named in honor of Augustus by a Decree of the Senate in the following words: Whereas the Emperor Augustus Caesar in the month of Sextilis was first admitted to the consulate and thrice entered the city in triumph, and in the same month the legions from the Janiculum placed themselves under his auspices, and in the same month Egypt was brought under the authority of the Roman people, and in the same month an end was brought to the civil wars, and whereas for these reasons the said month is and has been most fortunate to this empire, it is hereby decreed by the Senate that the said month shall be called Augustus.

Julius Caesar and Augustus having been honored by giving their names to two of the months, other emperors desired the same honor. Suetonius says that the Emperor Nero called the month of April Neroneus, and that Caligula called September Germanicus in honor of his father. It is a good thing these names did not stick.

EDITOR'S NOTE: The ordinary year of the Romans, before the Julian reform, consisted of 355 days, distributed into twelve months as follows:

January	29 days	Quintilis (later named July)	31 days
February	28 days	Sextilis (later named August)	29 days
March	31 days	September	29 days
April	29 days	October	31 days
May	31 days	November	29 days
June	29 days	December	29 days

FOR A PERPETUAL SYSTEM

By HAROLD J. BROWN

Chairman of the Synodical Committee on Calendar Reform, Reformed Church in America

MAY we think a little further upon the subject of calendar reform? Reverend Bovenkerk in his articles has so adequately described The World Calendar, which has been the subject of study by the Synodical Committee, that no repetition is called for. Let me, however, tabulate the obvious advantages which may be gained by the adoption of The World Calendar: 1. A perpetual calendar astronomically accurate. 2. Divisibility into halves and quarters. 3. Equality of quarters and half-years. 4. Stability of holidays and a fixed Easter.

In January of last year Dr. Ingham asked for a preview of the Committee's report to the 1939 General Synod. My reply to his letter gives what appears to be a unanimous Committee opinion. I quote therefrom as follows:

> I am more and more convinced that from the Church's viewpoint The World Calendar will be of tremendous help. This help extends to the fixing of the date of Easter and also to the fixing of the other holiday dates throughout the year. Obviously, it gives the Church an opportunity to line its forces against problems which are recurrent each year rather than makeshift accommodations for holidays which occur in different places in each year. You will note that during the Church's fiscal year, namely, April 1, 1936, to April 1, 1937, there were two Easters.

Reverend Hospers has in two recent articles very ably raised the only meritorious objection which so far has come to my attention. The fact that a plan of reform which would affect so many people has but one objection raised is in itself singular. The World Calendar with its perpetual quality, its fixed Easter and its intercalary days will change to some extent the lives of every group of people—religious, social, financial, industrial or what you will. Yet one objection is raised. Let us inspect this objection because it is sincerely raised and should be accorded the weight it deserves. The objection is that the intercalary days proposed would break up the sequence of seven-day weeks which has come down to us since a time before the memory of man. Whether or not the seven-day sequence has been retained unbroken since the Second Chapter of Genesis is a matter of some conjecture. We do know that until 321 A. D. the seven-day week was not a part of the official calendars. Consequently, prior to that year all of the calendars—the Egyptian, the Babylonian, the Julian—were perpetual. The introduction of the seven-day week into the calendar by Constantine the Great in 321 A. D. upset the perpetual quality of the calendar and ever since we have had no two successive years alike.

Before we can restore the perpetual quality to the calendar, we must overcome the objection that we are violating Divine Law, that we are

icked, and that it is an ungodly innovation. If this is nearly as bad as everend Hospers puts it, many of us will have to revise our ideas.

Let us go back to the very beginning. Genesis I:1—In the beginning od created heaven and earth. To most of us the great revelation of God the magnificence and wonder of the universe. This evidence, immediate nd visible, of the plan of God is what appeals to and is readily understandble by the mind of man. In what manner did God fashion the universe? et us sit with the ancient Egyptians as they watched the constellations rom the Nile Valley. They began their year when the Dog-Star, Sirius, nown to them as Sothis, appeared in the East just before Sunrise for the rst time after having been blotted from sight by the brightness of the sun. hey knew that this event, which we call the heliacal rising of Sirius, eralded the overflow of the Nile and the refertilization of the valley. pring had come. The interval of time between the recurrence of this vent corresponded, of course, with the length of time taken for one revolution of the sun around the earth. We know with absolute accuracy this nterval of time. There is, however, no phenomenon of the heavens or the arth to my knowledge which corresponds in its recurrence to the interval f seven days.

The object of all present calendar reform is to make the calendar pertual. It is utterly impossible to do this without either changing the ngth of the year or modifying the seven-day week. If calendar reform is get anywhere, the seven-day cycle must be interrupted since any effort change the length of the year would lead only to more confusion. One of ne opponents of The World Calendar has recently spoken to me of the alendar suggested by his group. This calendar would save up the intercalary days for five or six years and then insert a whole week in that year. f course, this intercalary week would not come at the same interval each me as can readily be figured out, so that far from improving the stability f the present calendar situation, such a calendar would leave us in a position where one year would be a week longer than the years around it, and here would be no particular rule to calculate in what year this intercalary eek would pop up.

This business of calendar reform is not a flash in the pan. It has been ne subject of long and earnest study by scholars for many years. Rabbi Iartin M. Weitz, in his "Time in Jewish History," says:

"If The World Calendar in no wise sacrifices the week as is charged by any co-religionists it may indeed be another great reform worthy of conderation. If it sanctifies the week additionally in that it can reintroduce n ancient Jewish practice—a 48 instead of 24-hour 'coverage' for major est-days and festivals, it may well be time to lengthen again the one-day nd one-week festivals by one day for each. Thus Passover would be celerated by all for eight, not seven days, and New Year's, for two, not one

day. Orthodox Jewry celebrates eight and not seven days for Tabernacles and Passover, and two, not one, for New Year and Pentecost, in order that Jewry all over the world shall be able to celebrate these festivals simultaneously. This practice of a lengthened festival in general is proposed in part by The World Calendar in its Year-End Day and Leap-Year Day so that on each of these instances there would be two days of leisure celebrated simultaneously by the world-at-large."

Elisabeth Achelis, president of The World Calendar Association, in an address entitled "Being on the Square with Time," said:

> In this equal-quarter basis of the new World Calendar an amazing analogy is found with that of the new city of Jerusalem described by St. John in Revelation. You will remember that he says, it "lieth four-square" and "had a wall great and high and had twelve gates." The story continues to specify three gates to the east, three to the north, three to the south, and three to the west. We read that these gates are never closed and nations walk in "glory and honor" within this four-square city. A tree of life also grows therein which "bear twelve manner of fruits and yielded her fruit every month: and the leaves of the tree were for the healing of the nations."
>
> The two days, Year-End Day and Leap-Year Day of the new World Calendar recurring through the cycles of time, might well be compared to the leaves of the tree which heal nations and peoples. For these days, being international holidays, are living symbols of world cooperation and world amity. The four-quarter division of the new calendar, so analogous to the four-squareness of the new city just described, has a greater and deeper significance than might be imagined at first. Our very earth itself is created on a four-fold plan.

In 1923, the Pan-Orthodox Congress of the Eastern Orthodox Church passed the following resolution which is the nearest approach to a united expression of the opinions of the Eastern Churches so far recorded:

> This Congress requests the Oecumenical Patriarchate, after previous agreement with the various Orthodox Churches, to signify to the League of Nations that the Church is quite prepared to accept the new calendar which is being devised, provided the same is accepted by all the Christian Churches. While the Orthodox Church would prefer a calendar preserving the continuity of the week, it is nevertheless not bound by such a preference if the other Churches agree to the acceptance of a calendar involving interruption of this continuity. Moreover, if the common consent of the Christian Churches is obtained, the Orthodox Church is prepared to pronounce in favour of the stabilization of the festival of Easter on a day which must always be Sunday, but a desire is expressed that such an immovable Easter shall correspond to the actual Sunday of Our Lord's Resurrection, determined by scientific methods.

According to Brendan McManus, Secretary of the Rational Calendar Association of Great Britain, the most important move taken by the United States Churches toward calendar reform was the adoption by the General Convention of the Protestant Episcopal Church at Atlantic City on October 19, 1934, of the following resolution:

> Whereas, recent studies and inquiries, instituted at the request of the League of Nations, have revealed an overwhelming proportion of Christian opinion in support of the stabilization of Easter and the reform of the calendar;
>
> Whereas, the proposed fixing of Easter on April 8, as provided by The World Calendar, comes nearest the actual date of the first Easter as determined by competent scholarship;

Whereas the adoption of this reform has been favored by the representatives of practically the whole of Christendom in respect to its adherence to the time-honored divisions of the year into twelve months and equalizing the quarters of the year;

Whereas, in particular, the unity of the Christian Church directly involves a uniform calendar as desired by our brethren of the Eastern Orthodox Church, as well as by other large bodies of Christians;

Therefore, be it resolved that, with the understanding that all the great historic Christian Communions are favorable to the proposed changes, the General Convention of the Protestant Episcopal Church approves the definite stabilization of Easter on April 8 in a reformed calendar of twelve months with equal quarters;

And that copies of this resolution shall be forwarded to His Grace the Lord Archbishop of Canterbury, to His Holiness the Oecumenical Patriarch of Constantinople, to His Holiness Pope Pius XI, to the President of the Universal Christian Council for Life and Work, to the Secretary of State of the United States, and to the Director General of the League of Nations.

The Archbishop of Canterbury, in a speech at the House of Lords on March 4, 1936, said:

"Constitutionally, I have a great dislike of any proposal to change long and well established customs unless there is a very strong reason; but I am bound to say that I have found it impossible to resist the plea for reform in this matter which comes, I think it may be said, with practical unanimity from the representatives of all the great organizations of trade, industry and commerce throughout the civilized world."

I should not mention the actions of the various church bodies on the subject of calendar reform without mentioning the Chamby resolution passed by the Universal Christian Council for Life and Work in August, 1936. Our own Church, as represented by the Federal Council of Churches, was represented at that meeting. The text of the resolution follows:

Whereas the Universal Christian Council at its Eisenach meeting in 1929 expressed its desire for a careful study of calendar reform and Easter Stabilization; and

Whereas the Council in 1932 instituted an intensive study of these subjects by its Research Department; and

Whereas these studies and reports from the Churches have shown that a reform of the calendar and the stabilization of Easter would, if carried through, receive the support of the overwhelming majority of the Churches, providing it is based upon the perpetual twelve-month, equal-quarter plan proposed by the League of Nations

Therefore be it resolved that the Universal Christian Council instructs its Standing Committee on Calendar Reform to notify the Secretary-General of the League of Nations concerning the above report and to secure the most effective presentation of this action of the Churches at the forthcoming world conference on Calendar Reform and the stabilization of Easter and finally

That this Council asks the Churches to inform their respective Governments of this action and of their views with regard to the desirability of adopting the new calendar.

Evidently the many Churches which have heretofore expressed their approval of calendar reform in general and The World Calendar in particular have not considered the insertion of intercalary days in the calendar as contrary to church dogma.

AS SEEN FROM BELGIUM

By KENNETH JOHNSTONE

RECENTLY I have had the privilege of studying and discussing with Paul van Zeeland, Belgian economic expert and former Premier, some aspects of his recent Report on world trade problems. Undoubtedly there is much in common between van Zeeland proposals for dealing with world economic and political problems, and the proposals for a rational calendar to replace the present unbalanced Gregorian calendar.

The van Zeeland Report, which is now being examined by the principal World Powers, is a comprehensive, sensible and courageous attempt to avert world catastrophe by tackling the economic crisis that is basic to the sharp political differences maturing in Europe today.

But one of the greatest obstacles towards the acceptance of a sane solution to the problem of world trade is a fundamental *antagonism* that exists between the great European powers—a suspicion of the other fellow's motives, a strong doubt that he can make any offer in good faith. "What is the racket?" seems to be the first reaction towards any proposal for an international trade agreement.

It is obvious that before there can be agreement between nations on matters that affect their vital trade interests, there must first be established a basis of common trust. The nations of Europe particularly must learn that the other fellow is not always a rogue.

Unquestionably, should nations ever reach a common agreement on an issue touching all of them, and in such a manner that no one nation may feel itself cheated to the profit of another; then a real basis will have been established for the settling of the other burning issues of the day.

Such a primary agreement to be reached must of necessity be one that affects the life of every person in every country. For it is of little avail that leaders come together to settle the matter of garrisons in the Sanjak of Alexandretta or the regulation of international rights in Danzig, when the majority of people in the world have not even heard of either place, and don't want to hear of them. Such agreements can only be formal, can add nothing towards establishing a common trust between peoples.

Europe today seems a Hell's Kitchen. Armed to the teeth, nations are preparing again to spring at each others' throats. Old alliances are hastily re-established and new friends are viewed with ill-concealed suspicion as Europe prepares to drag the rest of the world to a common doom. It is difficult to think of an issue that would convert a cage of snarling wolves into a domicile of peace and good-will.

But much of this ill-feeling and mutual hatred is surface show. Much of it has been artificially created and carefully fostered for purposes that

have nothing to do with the welfare of the peoples involved. To say that this people or that people are a war-like type, that they are burning for revenge, and so on, seems really ridiculous when personal contact with the so-called "big bad wolves" reveals no serious heat or rancor. Take for example the French and the Germans, whom politicians have us believe to be "traditional enemies."

The man-on-the-street in Germany and his brother in France want no more war, would be solid friends if they were given the opportunity. Especially if they could be shown by an achievement that touched their lives intimately, that agreement was not only possible, but mutually profitable!

The issue that is ideally suited to this purpose is calendar reform. A rational calendar does not benefit the American at the expense of the Jap. It does not rob the German to load the French and the English with spoils —and debts. It does not reduce some races to servitude to elevate others.

On the contrary, the acceptance internationally of calendar reform could only affect Europe and the entire world as a sane ray of light piercing through the clouds of hate and mutual distrust to reveal the essential truth of good-will that lies in all men's hearts. It would be a demonstration of world sanity at a time of universal panic. It would go a long way towards restoring many a shattered faith in mankind, particularly in Europe, disillusioned and broken by wars, revolutions, and internal strife.

Calendar reform, or more specifically, The World Calendar, could only come as a gesture of world planning and peaceful progress that would be of far greater *general benefit* to the world today than the intrinsic value of calendar reform itself. We do not need calendar reform for its own sake alone. We need it to demonstrate to every man of good-will that the world has not gone completely mad; that it need not go mad if people will learn mutual trust and mutual interdependence.

Upon those people who have understood the necessity of calendar reform, and who have devoted years of their lives to seeing it accomplished, there devolves a greater responsibility than ever before. They are not only crusaders in the interests of the advancement of science; they are champions of world sanity. And in the achievement of their task, they bring closer to solution those other more burning problems that strike at the very foundations of human society.

Mankind has only learned in the past from experience; from trial and failure, trial and failure until he did not fail. The fight for calendar reform has not been an easy fight perhaps. But it has gone ahead tremendously in recent years and it has gone ahead in the face of a breaking down in international relations in almost every other sphere. It has gone ahead when the rest of the world seemed going back. But it must be driven ahead more rapidly. Need is more pressing, consequences more vital. Calendar reform can become a weapon for securing world order.

UNIVERSITY INTERVIEWS

By James L. C. Ford

University of Wisconsin

UNIVERSITY administration, with the problems arising from scholastic and academic life and routines, demands efficiency and businesslike methods on a large scale. These qualities are demanded alike from the registrar and bursar, charged with enrolling thousands of students in a few brief days, from the controller or business manager, occupied with supervising the maintenance of million-dollar physical plants and a host of non-academic employees, from the deans and faculty committees, entrusted with scholastic schedules and calendars. Administrative problems offer a constant and daily challenge. And any suggestion of possible aids to solving these problems gains an interested hearing and intelligent welcome.

"The World Calendar plan would make possible certain clear aids in university administration," said Dr. Clarence A. Dykstra, president of the University of Wisconsin.

We were sitting in his dignified presidential office in Bascom Hall looking out on University Hill and the campus of one of America's largest state universities. Outside the windows, students were hurrying to their classes in the familiar daily activity of this great academic community where 11,500 students assemble yearly in a veritable city of their own.

"There would be no disadvantages certainly. For The World Calendar plan would mean but little difficulty in adjustment and it would ease the calendar at certain points," President Dykstra continued. "When compared with the thirteen-month suggestion, immediate advantages are suggested. There would be none of that immediate opposition arising from human nature's natural dislike of sweeping changes.

"Take the field of elementary textbooks alone—a reform along the lines of a 13-month calendar would necessitate innumerable changes. Whereas The World Calendar plan would avoid these to a great extent and yet provide for some useful and needed reforms."

Other administration officials of the University of Wisconsin echoed President Dykstra's words. These educational experts suggested a wide range of benefits to be gained from the revised calendar structure, benefits applicable not only to a single university campus but to the hundreds of colleges and universities of the United States and down through its entire educational system.

In applying the proposed new calendar to college time problems, first

of all comes the task of making up a schedule for the year, the university calendar. A number of vital questions must be considered—opening dates, vacation periods, graduation weeks. Holidays are part and parcel of this problem, movable holidays make it an exasperating one at times. Examinations must be gotten in and registration dates.

To Prof. Charles A. Smith, veteran secretary of the Wisconsin faculty, The World Calendar plan offered a number of interesting possibilities. For he is charged with the fundamental task of making up the university calendar.

"Three or four points would have to be considered at the beginning," Professor Smith suggested. "Legal holidays would always interfere with certain groups of courses—for example, Washington's Birthday under The World Calendar plan falls on a Wednesday and thus would always hit the Monday, Wednesday, Friday groups instead of alternating from year to year with the Tuesday, Thursday, and Saturday courses.

"To balance this feature, there would be the advantage of knowing exactly when a holiday would come and thus it would mean that your vacation periods would not vary as they do now with the Christmas recess.

"In planning the calendar now—we always start at Wisconsin with a Wednesday, the specific Wednesday swings back and forth from year to year through an entire week's range around September 25. The World Calendar plan would offer a non-variable, definite date, the Wednesday that is September 20 perhaps. And thus we could make up a single calendar, always the same from year to year—perpetual. We can't do that at the present time without varying from one year to the next by one or more class days."

Across the hall, Curtis Merriman, the registrar, expressed agreement. His is the task of enrolling 11,500 students in their classes in the brief span of four days, a mammoth undertaking and appalling at first glance.

"The World Calendar plan undoubtedly would make for ease in arranging the university calendar," he declared, "and this would be especially true for holidays. We'd avoid the broken weeks that we have at present during the opening and closing of school years. As for Christmas, it would be possible to provide for holiday vacations of equal length, making for uniformity among different colleges.

"It might make it easier to adjust the opening and closing dates of the public school system to the university calendar and thus enable their teachers to attend summer sessions without the conflicts and over-lapping which is so common at present. It certainly would lead to regularity due to the fixed Labor Day, a gauge by which so many school systems fix their opening dates."

To Mr. Merriman, there is much to be said for The World Calendar plan

of revision as compared with any other suggestions that he has heard about.

"You'd avoid all the instinctive, inherent antipathy to the new and unfamiliar which characterizes reactions to innovations such as a 13-month calendar," he pointed out.

When the students are enrolled at last, they come under the guidance of the deans and directors of all the various colleges and schools which make up the modern university. Prominent among these faculty officers in any university is the dean of men and Dean Scott H. Goodnight of Wisconsin is no exception—especially as he also is charged with responsibility for the summer session, magnet of thousands of graduate students and teachers.

"It looks like a good scheme, a very good scheme," Dean Goodnight commented on The World Calendar, "certainly preferable to the thirteen-month idea. It would regularize and systematize things tremendously.

"Of course, universal international adoption would be necessary and even then there would remain the question of how universally it would be put into use. Remember the decimal system—it is in almost universal use in Europe. We use it for our money but have refused to accept it in this country for weights and measurements.

"However, if the League of Nations puts through a treaty and the plan receives strong international backing, The World Calendar plan certainly would introduce a number of definite improvements over our present indefinite and changing calendar."

Prof. Grant M. Hyde, director of the School of Journalism and foster-father of many a successful newspaperman, added his endorsement with special reference to the convention advantages implicit in The World Calendar reform.

"Every year at Christmas time, the learned and scientific organizations of the country hold their meetings," he pointed out. "And every year they have to endure the confusion of academic calendars, each one a law unto itself. At one university, a recess may begin the day before Christmas and last until a week after New Year's. At another, the holidays will start a week before Christmas and end a week later. All the delegates, generally faculty members at the universities, have to squeeze in their convention dates if, as, and when possible. A universal, permanent calendar would eliminate this defect to a considerable extent."

Professor Hyde also commented on the value of The World Calendar as a troubleshooter in the academic calendar difficulty. It would be hard, he thought, to over-estimate the importance of this improvement to college administration.

"Our present university calendar here is based on a seven-year cycle and the opening date and the other events keep moving forward a day for seven years and then are arbitrarily forced to drop back a week, making

for some confusion from year to year. The World Calendar, of course, would make that unnecessary."

Down at the foot of University Hill, in the low Administration Building of weatherbeaten yellow stone, the Wisconsin finances are guarded over by Alfred W. Peterson, comptroller, and Cecil B. Horswill, bursar.

As comptroller, Mr. Peterson is responsible for a multitude of money matters, easily equivalent to the affairs of a large commercial corporation. All business activities are in his hands: accounting, purchasing, supervision of a civil service personnel of nearly 1,400 men and women, maintenance and operation of a score or more of university buildings including the heating station and electrical distribution.

Keen-eyed and alert, Mr. Peterson sensed immediate advantages from World Calendar reform in his field of university administration.

"It undoubtedly would prove advantageous with respect to those departments which are semi-commercial and where we have cost accounting," he said quickly. "Such departments—the hospitals, the Union (Wisconsin's student activities center), the dormitories—all would find their accounting problems simplified by a plan providing for more uniform months.

"I teach a course in budgeting. Just the other day we were talking about this very thing—the problem of budgeting for months with their variable number of days.

"I certainly would welcome some uniform move on holidays especially because it would simplify the question and put it on a more practical basis for departments such as ours."

Mr. Horswill, the bursar, to whom the students pour out a flood of dollars in fees and tuition when each semester opens, followed Mr. Peterson in hailing the World Calendar plan as a profitable pattern for the business end of a university.

"Unquestionably there would be an advantage in having registration days on certain dates," Mr. Horswill declared. "It would affect us favorably in figuring refunds—they'd always be the same. And the end of the month always coming at the same time would make record-keeping easier on that basis and tend to uniformity. There would be standard comparisons for all years at registration times. Yes, indeed—such a plan would make our job easier."

Bursar and university president, registrar and deans and comptroller —they united in recognizing the merits of a calendar reform which presents a balanced and harmonious structure and permanence in form. For the university administrative official as well as for the executive in every other walk of life, the World Calendar offers an end to confusion and calls forth an enthusiastic response.

TIDYING UP THE CALENDAR

By Margaret Fitzpatrick

"THIRTY days hath September," I murmured to myself as I made my small son's bed one morning. "That's right," I figured, "Teddy's birthday comes two weeks from today." And my thoughts turned to the calendar we live by, with its unequal months which vary in length in higgledy-piggledy fashion.

"It's a silly business," my mind continued, "that a nursery rhyme should be our guide to something so fundamental as the measurement of time. Why can't we have a tidy calendar system?"

Not long afterwards, at a meeting of the Woman's Club, I was asked to be chairman of a committee to study calendar reform, and I accepted.

I soon discovered that my vague notion about the need for a more logically divided calendar had occurred to other people besides myself. In fact a world movement was afoot to reform the calendar. A definite plan was gaining wide acceptance. Known as The World Calendar, it proposed to keep the present 12-month year, but divide it into equal quarters, giving the first month of each quarter 31 days and the second and third months each 30 days. To take care of the odd day in the year and make the same date fall on the same day forever after, a special "Year-End Day" would be established as an extra Saturday following the 30th of December. Easter would be stabilized to fall on the same date every year, and national holidays shifted to Mondays wherever possible.

The World Calendar appealed to me strongly. I had a hunch that other women would welcome it also. For women spend their lives creating order in their households. Wouldn't they naturally prefer a tidy calendar with months of easy-to-remember length? I decided to find out.

Therefore I started my committee work with a campaign of personal research, interviewing club members and collecting their opinions.

Almost without exception the women I talked to were intrigued by The World Calendar proposal. But their reasons for liking it were as varied as the women's interests.

When I called on Mrs. Davis I found her deep in plans for her daughter's marriage. She immediately linked its date with the calendar proposal. "If we had this revised calendar," she said thoughtfully, "Barbara's wedding anniversary would always fall on Wednesday, the very day on which she was married. That's a nice idea." Then her mind leaped a generation. "And if Barbara has children they'll have real birth*days*—not just birth dates. All sorts of anniversaries would have deeper significance if they always fell on the same day of the week."

I expected Mrs. Nicholson to be calendar-conscious and I was not disap-

ointed. She had been a bookkeeper before her marriage, and she kept a ousehold budget book more faithfully than any woman I knew. She umped at The World Calendar like a hungry trout. "A year divided into *qual* quarters," she exclaimed. "My dear, you can't imagine what a con- enience that would be in business! Why, even in keeping my family udget, it would be a big help. Look at February in this calendar with 30 ays, instead of 28. When that pesky little month is brought into line it ill spare me a lot of figuring in comparing my monthly bills."

The idea of placing holidays on Monday proved to be one of the most opular features of The World Calendar. Mrs. Marsh, who has four young hildren and does all her own housework, groaned about the way holidays ow upset her weekly work schedule, falling as they do on any old day of he week. If they always came on Mondays it would be a comparatively imple matter to adjust them. Though overworked Mrs. Marsh seemed lmost to dislike holidays, she confessed that when a holiday fell on a week- nd and her husband failed to get a day off from work, she felt that he had een cheated. In common with every other woman whose husband had o work on Saturdays, she detested Friday holidays.

Mrs. Thomas, whose husband and teen-age children are as keen as she s about outdoor sports, gloated over the six or seven long week-ends the Monday holiday plan would bring. She talked about the skiing and skating hey'd get in during the winter, the golf, tennis, beach parties, camping rips, in summer. She questioned me closely about each holiday.

"What about Lincoln's and Washington's birthdays?" she asked. "They ome on different days of the week. Would the revised calendar celebrate hem both on Mondays?" I told her that the suggestion had been made that Washington's and Lincoln's birthdays be celebrated respectively on Satur- ay, the 11th of February (the actual date of Washington's birth) and Monday the 13th. Then those people who ordinarily work on Saturday ould be sure of a three-day holiday.

The idea of celebrating Independence Day on Monday, July second, did ot offend her sense of patriotism. Nor did it bother the other women I alked to. "After all," one of them argued, "when July Fourth comes on Sunday now we celebrate it on Monday. One day further from the date f the signing of the Declaration of Independence would not matter."

Mrs. Thomas worried a little about Thanksgiving. "It has always come n Thursday," she said. "Wouldn't it upset tradition to put it on Mon- ay?" I told her that it had been a national holiday only since 1864. Be- ore that it had been observed by the different states on various days. So istory would not be seriously violated. But if popular opinion should eep it on Thursday, The World Calendar would have the advantage of xing it on a specific date, say the 23d of November, since the 30th is too lose to Christmas for most people's taste. That satisfies her, and she goes

around spreading the doctrine of reform with exuberant enthusiasm.

The chairman of our club's program committee and the principal of the grammar school both felt, for similar reasons, that The World Calendar would simplify their planning. With the same day always on the same date, and the holidays fixed on Mondays, planning the year's schedule would be far easier. The principal felt that with Labor Day always coming on September 4, the opening of school would come at its proper time, and the school calendar would fall into place well. The proposal that Easter always come on the same date, possibly April 8, the Sunday nearest the historical date of the resurrection, appealed strongly to both of them.

Every woman on my list, in fact, approved of the idea of a fixed date for Easter in early April. Women, apparently, are no fonder than storekeepers of the way Easter now strays around the calendar. Few of them see any logic in determining the date by the moon. They neither understand nor have any religious association with the present system.

The children of the women I interviewed, especially those who went to boarding school or college, were enthusiastic about the revision of Easter to a fixed date. They thought it might serve to bring their Spring holidays into line with other schools. Then they would be home at the same time as their friends, and Spring vacation would be as jolly as Christmas vacation.

According to The World Calendar, December 25 falls automatically on Monday. Everyone thought this ideal. A close friend of mine confided a special reason for welcoming it: "Jack's office always starts to celebrate after lunch on the day before Christmas. Jack is always late for supper. He comes home tired, and in no mood to enter into the spirit of the festivities with the children. With Christmas coming on Monday, we'd be a peaceful, happy family group on Christmas Eve."

The proposal for Year-End Day, an extra Saturday to follow Saturday, December 30, pleased the advocates of long week-ends. It had special appeal for Mrs. Richardson, who is deeply interested in the cause of world peace. She saw in this day—set apart from the ordinary sequence of days—an opportunity for a universal holiday of world-wide significance. It might be dedicated to the cause of international good will. Its observance might well prove a potent influence against war.

I have given you the highlights of my survey. It uncovered so much interest in The World Calendar that my committee agreed with me that we ask that a full meeting of the club be devoted to the subject. The meeting was held and proved one of the liveliest of the year.

If our club's reaction to The World Calendar is typical, and I'm sure it is, women generally will welcome this calendar revision. Without upsetting the present scheme, it would improve it in a number of important ways that would delight the feminine instinct for order. The year would be like a freshly cleaned and tidied house, with every date in its appropriate place.

AUSTRALIAN COMMITTEE APPOINTED

A REUTER'S telegram from Canberra says: "Australian scientists have decided for the first time to associate themselves with authorities overseas in investigating calendar reform. The recommendations committee of the Science Congress decided today that a panel of Australian experts should be created to maintain communication with overseas committees working on the subject.

"Recently Australian scientists have shown considerable interest in the proposed new World Calendar, which would divide the year into equal quarters."

ON THE ROAD TO WORLD PEACE

By THE REV. SWAMI OMKAR

Founder of the Mission of Peace, Peddapuram Taluk, India

(From the magazine *Peace*, December, 1938, published at Peddapuram Taluk, India)

OUR magazine *Peace* is dedicated to peace, its readers and subscribers are friends of peace, and my own life is consecrated to peace. As I often say, however, to obtain peace within ourselves is not enough: ve should also work for and uphold peace in all the various activities vhich surround our lives. While visiting in America, I was impressed y the people's sincere desire and earnest longing for peace, as expressed n many ways.

About one of these ways I shall write you today. It is a movement to mprove our present calendar, because there exists no order or harmony n the civil calendar which we use today.

The calendar, as it has come down to us from ancient days, is a manade method of dividing time into various periods, adapted to the purposes of civil and social life. It is a mathematical arrangement by which nan adjusts days, months, seasons and years in conformity to nature's aw as fashioned by the Creator. The week, which is outside of natural aw, was given to mankind through divine guidance and inspiration.

It was a difficult task for man to adjust the 365 days and a fraction vhich complete the year, with the 12 months (dependent upon the moon), vith the seasons (influenced by the sun), and the arbitrary 52 seven-day veeks, not derived from nature.

The first problem encountered was to choose between the variable noon-periods of 29½ days and the seasonal divisions of the year, as the asis of his calendar. The clear skies and bright nights of Egypt lent ncouragement to study and research in the field of astronomy. By close bservation of the sun, moon and stars, and the shadows cast by the pyranids, the Egyptians concluded that the sun was the central influence of he calendar. The greater light of the heavens, and not the lesser light, vas to be henceforth the guiding factor in measuring and counting man's ime. Thus, through the Egyptians, the solar year became the nucleus round which the calendar was built. There are still some nations and eoples who count their year-time by the moon-cycle—the Mohammedan alendar is perhaps the best known of this type.

The Egyptian calendar, from which our present Gregorian one was erived, divided the 365¼-day year into 12 months of 30 days each, with he remaining five days observed at the end of every year as religious

holidays. In occasional years, priests and astronomers added an extra day, to keep the calendar true with the seasons. This early calendar had no week.

Scientists and historians tell us that this calendar was adopted by the Egyptians as early as 4236 B. C., which would mean that today our calendar is actually 6175 years old—very old as man counts time, but very young in the eyes of God, who counts 1000 ages (yugas) as a day. Notwithstanding this fact, the Christians count their calendar-year from the reckoned birth of Christ, the beginning of the Christian era, now 1939. In similar manner the Jews reckon their lunar calendar from the days of Moses, 5699, while the Moslems compute from the time of the Hegira, 1358 A. D.

Patriotic Italians have been carrying the date XVII in addition to 1939, to commemorate the 17th year of the Fascist State, and some Germans date their present calendar-year with an additional VI from the time when Hitler came to power. Thus does man ever try to nationalize and religionize the calendar to satisfy his own faith and country, quite forgetting that the calendar belongs to the whole world and as such is one of the firmest links uniting mankind, in the comradeship of time.

The calendar has gone through several revisions and reforms, such as that of the Egyptian, Julian, Constantinian and Gregorian, until today in the entire Western world and in our country, India, the Gregorian calendar is the official one in use.

If you will examine with me this official calendar used in India, we shall easily see how changeable and irregular it is. Every year our calendar, by beginning on a different week-day, causes everything else to change. Thus there is no order in its arrangement and usage. The number of Fridays, Saturdays and Sundays alters in every month. Sometimes there are four, sometimes five. The months begin on different week-days, and their lengths are so variable that we can only remember them by counting the knuckles on our hand. When one of our great feast-days Pongal (Sankranti) falls one year on the 13th of January, we know that the next year it will fall on the following day of the week or even a day later if it is a leap year.

The 365 days in the year follow each other independently of the 52 seven-day weeks, the 12 months, the various seasons, and the quarter and half-divisions of the year. These important sections of time are thus competing rather than cooperating with each other. It is true that each is a separate and distinct part of the calendar, just as there are different and distinct notes in a song. But there is this great difference between the two: the different notes in a song create harmonious and beautiful music, whereas the different parts of the calendar succeed only in bringing about a chaotic confusion in the telling of time. There is no order and harmony in the Gregorian calendar such as there exists in our solar system, in the vast universe, and even in our clocks and watches.

Men achieve peace and order by mutual agreement, yet we know that many people are as yet unwilling to yield something of their own and something that is dear to them in exchange for something that coincides with the custom of others. But the easiest and happiest agreements are those based on mutual grounds. That is why the new World Calendar, now advocated by so many outstanding men and women throughout the world, offers the happiest form of agreement. For it belongs to no one race,

aith or nation. It is common ground for all humanity because it has favor for none.

This new World Calendar, keeping to the familiar 12 months (equivalent perhaps o the Zodiac), adjusts the length of these, so as to make equal quarter-years of 91 ays and to bring New Year's Day always on a Sunday, the first day of the week. his is done by thinking of the calendar as having 364 days and setting aside the 65th day of the solar year as an extra day, which has no part in the last quarter, yet elongs to the old year. It is regarded as an extra Saturday, a day of passage, the onnecting link between the old and the new year. Called "Year-End Day," it will be niversally observed as an international holiday throughout the world, thus encouragig world unity and world amity.

This balanced and harmonious arrangement of the calendar will have ays, weeks, months or quarters all meeting in perfect agreement four imes every year at the end of every quarter. Holidays, festivals and ational days are thus celebrated forever on the same week-day and date, ear after year. To know The World Calendar for one year is to know t for all years. For it does not change. It makes our calendar as regular nd dependable as our clocks. Yet with all this stability there is no nonotony in this calendar, because the three months within every quarter etain their own individuality in their slight yet ordered differences.

It is easy to see how happy this arrangement of The World Calendar is or all humanity—regardless of religion or race or nation. It is another tep toward the universal brotherhood of man. The World Calendar has herefore my wholehearted approval and support. I believe this was what our spiritual brother, Mahatma Gandhi, had in his heart when he vrote: "It would be a splendid thing if our 350,000,000 people could have a nified calendar. As most of the Indian calendars are arranged on a 12-month basis, it would obviously be easier to meet on this common ground. I am in favor of a standardized calendar. I am always ready to ndorse any honest movement which will help to unify the world."

The Mahatmaji realizes that when nations and peoples agree on such an important factor as time, other agreements may easily follow. For out of the sum of such agreements as these is universal unity made. We do well to support such a movement toward world unity. I am never tired of repeating that: "Unity is life and separation is death" and "The service of man alone is the highest worship of God."

And the service of man to secure a new calendar, which is balanced and rhythmic in structure, perpetual and ordered in form, harmonious and equable in arrangement, is assuredly a noble and worthy achievement. Side by side the people can live and worship, each respecting and honoring their own particular holidays in this World Calendar, in brotherly understanding and kinship. Of such movements as this reform of the calendar comes peace—that abiding peace in the material, as well as in the spiritual world, which passeth understanding and comes of God.

COLLEGE TIME TROUBLES

By W. THETFORD LEVINESS

IN THE sum total of loss and waste which results from the irregulariti of the Gregorian calendar, there is one group of items which is ord narily overlooked, but which certainly bulks very large in the aggregat This is the host of trivial annoyances which calendar irregularities cau in the daily life of the individual. This group bulks large because it i volves so many millions of people and because it occurs practically eve day. Trivial in themselves, these annoyances are multiplied so many tim that it would be folly to ignore them.

In this article, then, I propose to talk about trivial matters. But I mai tain that they are important by reason of their very frequent occurrenc

Let us take, for example, an incident selected haphazardly out of m memory—a sample of personal inconvenience from our antique calenda

On June 1, 1938, I was in New York City for the purpose of receivi a degree from Columbia University. The conferring of degrees at C lumbia has taken place in past years on a Tuesday, so I naturally figur that the same procedure would hold good in 1938. I made my plans for a extended trip immediately after the exercises and my plans involved a vance preparation of transportation and hotel accommodations. Then suddenly learned that two calendar traditions had clashed. The Universit exercises, by unwritten law, must come in June, but in 1938 June did n begin until Wednesday. Therefore the Tuesday tradition was discard and the exercises took place a day later. My vacation plans were throw into turmoil and I was detained in New York by an unanticipated 24 hou and some very difficult rearrangements had to be made.

It was purely a personal matter and one of no importance to the wor at large. But to me it was a great inconvenience, an inconvenience du entirely to the fact that our modern world is still using an antiquated cale dar which has refused to yield to the intellectual revival of the Renaissanc the Reformation and the Industrial Revolution.

It was this occurrence that led me to devote a part of my summer to a inquiry of the calendar. I questioned many people whom I met, people i all walks of life. I found that some of them had never before been reall aware of the irregularities of the calendar but that when the matter wa called to their attention they were able to recollect ways in which they ha been personally inconvenienced. They were almost unanimous in agreei that our unmodern calendar interfered frequently with the otherwise o dered routine of their lives.

College students and professors are particularly receptive to the ide of calendar reform, because they are keenly aware of the difficulty the

have, year after year, in attempting to regulate a school year according to the laws of a medieval prelate who, through no fault of his own, was unable to foresee that the system of irregular months and quarters would not be able to cope with the inevitable advancements of scientific thought and precision.

One of the educational institutions of which I know personally, having been a student there, is St. John's College, in Annapolis, Maryland. A thoroughly modern institution of higher learning set against the background of a rich colonial history, St. John's begins its classes on the third Tuesday of September, plays its traditional football game with Johns Hopkins on the last Saturday of November, and recesses for the Christmas holidays between the day before Christmas Eve and the day after New Year's Day. After a second recess called Spring Vacation, which always coincides with Easter, the students and faculty of the venerable college look forward to the June Ball and other activities of Graduation Week.

Because of the vagaries of the Gregorian calendar, a different schedule has to be arranged and posted each year. This new schedule has to be consulted by every student and faculty member. Parts of it have to be memorized. But in spite of all possible publicity and precaution, in spite of a great total of laborious mental exercise, there are numerous mistakes made each year, particularly by those who rely either upon the schedule of the year before, or upon their own calculations. From year to year the opening of college moves through a seven-day cycle between September 15 and 21. A classmate of mine absent-mindedly returned to school a week too early on one occasion, because he had committed the unpardonable sin of remembering the opening date of the previous year and had subtracted one day from it. Mathematically, his reasoning was fairly sound, but he arrived in Annapolis on September 14, the second Tuesday in September, instead of September 21, the third Tuesday in the month. Because this student lived on the Eastern Shore of Maryland, he was compelled to make an arduous journey by car and ferryboat, back and forth between Salisbury and Annapolis three times within 8 days. The mistake caused his parents a considerable expense as they were financing his education, and the student had a good basis for bitter complaints against a calendar which forced his family to undergo additional sacrifices which it could ill afford.

One of the important calendar dates at St. John's College is the football game with Johns Hopkins, and here the calendar plays some of its dizziest of jokes on frequent occasions. The game traditionally takes place on the last Saturday in November. Since the national Thanksgiving holiday may fall at any time between November 24 and 30, the game takes place in some years *before*, and some years *after*, the annual festival. When the big game comes *after* Thanksgiving, many of the students are at home and miss it, because classes are suspended for a Thanksgiving "pause" between Wed-

nesday noon and Monday morning. Members of the football team of course cannot observe the national holiday. All this seems very stupid and most unnecessary, and would never occur in a revised and modern calendar.

Christmas holidays are another good example of calendar eccentrics. At St. John's, they vary from ten days to two weeks, according to the day of the week on which Christmas Eve falls. If it comes on Thursday, school is dismissed at noon of the day before, and classes are not resumed until a week from the following Monday. If Christmas Eve falls on Tuesday, the college authorities do not attempt to keep their students over the week-end just for Monday morning classes, so the vacation begins on the Saturday before Christmas. Other days call for various other rearrangements of the school calendar, and any educator who has ever wrestled with this problem needs no long and complicated argument to persuade him that a stable calendar would save him a great deal of worry and annoyance.

There are a certain number of legal holidays which fall during the school year, and which provide welcome oases of rest and recreation for students and faculty. When these fall on Sunday or Monday, they afford lengthened week-ends which make them definitely valuable for mental relaxation. When they fall in mid-week, they are merely spots of idleness, which break the week's schedule into two parts and dislocate classes with very little compensation of a rest or recreational value.

The greatest of all educational battles with the calendar comes at Easter. It is a battle in which many of our greater colleges have given up the vain struggle, and simply decided to ignore the holiday completely, letting their spring vacation come where it will, without regard to Easter.

At St. John's, however, the spring vacation still coincides with Easter. Each year the school calendar allows a week off from the noon of Wednesday before Easter until the morning of the following Thursday. Each professor and instructor, moreover, must give his quarterly examinations during the week preceding the vacation. The result is so unequal that it is a wonder nobody ever thought to remedy it. Easter fluctuates between the last week in March and almost the whole month of April—a period of 35 days, in fact. So completely does this upset the balance of the school year, that it is only reasonable to assume that many students fail in their quarterlies for no other reason than this calendar instability. Certainly the fluctuation is unfair and costly in many ways.

Several faculty members called my attention also to the fluctuations of the date fixed for the close of the college year. As the school calendar is set ahead each year to meet the demands of the tyrannical Gregorian system, so must Graduation Day recede into the earlier figures, until in some years most of the so-called "June Week" festivities and social functions actually occur in May.

In college athletics, the calendar plays some very odd tricks. A member

of the faculty at the United States Naval Academy in Annapolis told me about a curious example of this kind. "I am very fond of basketball," he said. "One year the season began in December, and I was on hand for the opening game. When I failed to see a certain player whom I had admired the year before, I asked an usher where he was. He explained with a grin that the Academy has a rule forbidding a midshipman from engaging in more than one major sport during the same month. The young player in whom I was especially interested had been on the football squad, and the traditionally final game of the season, with West Point, had taken place, as usual, on the Saturday after Thanksgiving. But this year that particular Saturday had fallen in December so he would not be allowed to play basketball until January of the new year."

The Naval Academy, like St. John's, has its "June Week," famous wherever the American Navy is known. But *June* Week sometimes proves an absurd misnomer, owing to calendar irregularities. On a recent occasion, the Navy's "June Week" opened on May 26 with the famous Army-Navy lacrosse game, and closed with President Roosevelt's conferring upon the graduates their commissions on the following Thursday, May 31!

Wherever one goes in educational circles, the school calendar must be built anew every year. Each year the deans and faculty committees must get together and pay their tribute of time and labor to the relentless cycle of the Gregorian schedule, fitting their two semesters and two sessions into its inequalities and irregularities. Each fall and spring, the professors must rearrange their highly specialized lectures and courses to cope with this ever-changing reality of calendar instability.

In my personal business, as the writer of a weekly column in *Gotham Life*, a metropolitan magazine, I must consult a calendar each week to find out how to date my article for the coming issue. I am a slave to the calendar which hangs above my desk. There is no rule for me to follow save the printed tabulation, no scheme that will bring order and stability into the calendar every year.

Since finishing at Columbia, I have accepted a directorship in a small research foundation in downtown New York. There are meetings of directors the first Thursday in every month. Under the present system, there is no key number, such as "527," which would indicate a regular order of dates upon which the meetings would fall each quarter.

No wonder then, that I endorse the efforts of The World Calendar Association to bring to justice the Gregorian calendar, and to repair its tyrannical inefficiencies. The proposed reform is a splendid and successful attempt to equalize the quarters, balance the year, and give order and permanence to a method of time-reckoning which has somehow failed to keep pace with the progress of the human race.

MODERN CHURCH CALENDARS

By FRED WINSLOW ADAMS

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Rising interest in planning the worship of the churches so as to include in a well-balanced calendar all the cardinal aspects of Christian faith and life in the course of each year has led many churchmen to a definite support of the proposals for a revision of the Gregorian calendar which will simplify the religious year as well as the civil year. A more complete discussion of the current proposals for *The Christian Year*, as outlined in this article, is available in pamphlet form from the Committee on Worship of the Federal Council of Churches, New York City, price 25 cents.

CONFUSION resulting from the variableness of Easter has resulted in many attempts to make Easter a fixed festival. The present consensus of opinion gives hope that the second Sunday in April may at length be determined on for Easter. This would make a seven-day variability but that would be a decided improvement. If the new World Calendar, proposed through the League of Nations, should become adopted, then the second Sunday in April would always fall on April 8th, and so make a perfect solution of a problem centuries old. The plan to secure a fixed date for Easter deserves support.

Systematic planning of a church year by an increasing number of churches is a hopeful sign. The use of the historic Christian Year by our liturgical churches is a distinct asset. It has been in vogue in Greek, Roman, Anglican and Lutheran churches from their beginning and is too valuable a heritage of the Christian Church to be longer neglected by any communion.

The Christian Year is not a mere program device of any committee, church or ecclesiastical council. It grew up naturally among the early Christians. It was at first a spontaneous outgrowth of some features of the Jewish ritual year, but was recentered by the growing experiences of the Primitive Church. Its development was a gradual process. The general observance of Easter by 150 A.D. was followed by Lent, Ascension Day, Pentecost, Christmas and Epiphany, all of which were in vogue by the fourth century. The Advent season probably had its rise in Gaul and was given its permanent place by Gregory the Great in the sixth century. Trinity Sunday was not added until the twelfth century. In the seventeenth century the Reformers overhauled the Roman and Sarum missals, making considerable modification and adopting new and elaborate lectionaries which have continued to our day.

Recapture and general observance of this historic year by Protestant

bodies, if revitalized with contemporary emphasis and tuned to harmony with Evangelical genius, will have great spiritual values and become another step in Christian unity.

It is as true of the terminology and use of the Christian Year as it is of liturgy that the living faith is ever freeing itself of dead tradition and conventional expression. This has been happily put by D. H. Hislop in the opening chapter of *Our Heritage in Christian Worship.* He holds that we must follow the principle of expansion, which means the conservation of what possesses historic or universal value and the giving to it of new meaning to fit the thought moulds and modes of expression of a new day. We believe that the Christian Year thus interpreted carries vital suggestions for greater beauty, variety and reality in public worship; that it has significant possibilities for systematic, Scriptural, and timely preaching; that it carries valuable suggestions for the commemoration of historic days, seasons and personalities; that it can give guidance for daily devotions and Bible reading; that it can provide an organizing principle for the church school curriculum; that it can help in the better ordering of church activities; and that it can focus the goal of the Church in the coming of the Kingdom and the building of a more Christian world.

Based as the Christian Year is on the life of Christ and His Church, there is a compelling spiritual reason for its more universal observance. If the proper and united observance of Sunday is a spiritual asset, together with the dramatic emphasis on Christmas and Easter, then it is easy to see that a well-balanced Christo-centric year might be a still further asset. Not only are certain days and seasons given dramatic commemoration but every day ties in as an integral part of the whole year and becomes motivated about the life of Christ, from whose birth the civil calendar of Christendom is already dated. Why should not the Church adjust its annual program in some definite and systematic way to the life of Christ?

Moreover, anything that tends to develop the historical sense of the Church is an advantage. We suffer from historical atomism. To know and rightly retain the continuity that grows out of the Jewish sacred Seventh Day into the Christian First Day of the week, out of Passover into Easter, Pentecost into Whitsuntide, the Kiddush or Last Supper into the Holy Communion or Lord's Supper, has a priceless value for the Church.

The use of the Christian Year as a background for preaching should save the minister from the tendency to harp on one string, or from a one-sided and inadequate presentation of the Christian message. The rhythmic sequence of Advent, Christmas, Epiphany, Lent, Easter, Whitsuntide and Kingdomtide, provides a natural flow in religious experience and an orderly plan for a year's preaching. Here is a framework into which all phases of preaching—doctrinal, ethical, evangelistic and missionary—will fit in an orderly manner. Such preaching will also become

timely and preserve variety. The minister will begin to plan his sermonic year not with January or September but with Advent. Religious instruction can also be made more meaningful by following the Christian Year.

And always there is the practical reason, that of the unity that comes from simultaneous emphases. If there is advantage in Christians observing Christmas and Easter together it is easy to see how such advantage will be intensified when all are following the same broad outline of activities the whole year through. This further helps in giving much-needed emphasis on the one universal Church of Christ.

A word of caution may be spoken to those who fear that all this savors too much of regimentation. Astronomically the change of season does have considerable effect on all our habits, thinking and moods. Business adjusts its changing service to meet these needs, and many of our organizational and avocational activities outside the Church change with the season. The ministry of the Church ought to be dynamic and flexible enough to meet the needs offered by all these exigencies. This does not mean that the service of the Church is a puppet of time, weather, fortune or event; rather it means that the service which the Church has to offer is organic with all of life. It moves and breathes with the rhythm of the life which it seeks to influence, inspire and transform.

In the Church calendar, the historic Christian Year is a basal heritage too great to be lost. Most of the historic seasons are being observed, in full or in part, by an increasingly large number of churches outside the more liturgical group. Most of us now observe Advent, Christmas, Lent (to some degree) and Easter, and perhaps Pentecost. There is every reason why we should follow Christmas with Epiphany as that provides an emphasis on Jesus' Messiahship and the world-wide scope of the Gospel. The calendar from Advent to Pentecost was in the universal practice of the Church by the close of the sixth century. The twenty-odd Sundays left unaccounted for were merely designated Sundays after Pentecost. In the twelfth century the Church added Trinity Sunday to complete the octave of Pentecost. Trinity expressed the specific Christian doctrine of God and so came naturally and inevitably into the calendar. The Sundays that followed were continued as Sundays after Pentecost in the Roman calendar but were renamed Sundays after Trinity by the Anglican Church.

The Christian Year has so remained, without a change of season, for the past seven hundred years. The unique thing in this Calendar Year is that after seven centuries a new season is added to be known as Kingdomtide. This will follow Trinity Sunday so that the remaining Sundays of the year will become Sundays in Kingdomtide.

The new word "Kingdomtide" is used to typify Jesus' ideal of the Kingdom of God carried over into the thought of our own day. It suggests the Church in action: at its task of building a Christian world.

BACK TO ANCIENT ANTIOCH

By GLANVILLE DOWNEY

Member of the Institute for Advanced Study and Curator of the Epigraphical Museum, Princeton University

CALENDAR reform was a constant subject of study and promotional activity in the Eastern Roman Empire. One of the daily trials of life to officials and private persons of that Empire was the necessity of using several different reckonings to indicate the year in which a date was written. There were no years B.C. and A.D. and there was no other numbered series of years used currently in all communities in business, legal and private records. One normally identified the year by the names of the consuls in office, or by the regnal year of the emperor. But many of the larger cities of Asia Minor, Syria and Palestine, most of which had existed long before the Roman occupation, had their own local eras, which were often used in the surrounding territories as well as in the cities themselves; these were reckoned from the cities' foundation, from their "liberation" by the Romans, or from other events in their history. So to fix a date one commonly used two or more different modes of reckoning, e.g., the names of the consuls plus the year of the local era. To add to the confusion, most of the local eras began at different seasons. Thus an event which occurred in the spring of a certain consular and regnal year would fall in one year of a local era, while an event in the autumn would fall in the same consular and regnal year, but in the next year of the era.

A measure of uniformity was attained when the Romans introduced the indiction cycle, apparently as an aid in keeping tax-records. The cycles were of 15 years, the first reckoned from A.D. 297, the second from 312, and so on. The years of the cycles began on September 1st (Julian), and came to be widely used in reckonings for all purposes. Generally the year of the indiction was given in conjunction with the year according to another reckoning; but the indictions were so convenient that sometimes the indiction-year alone was used, and one finds tombstones, for example, which record that Quintus Antonius Julianus died in Indiction VII. This is something like dating the battle of Trafalgar on Thursday, but the reckoning would be recognizable for 15 years, and apparently that was enough for some purposes.

Modern historical scholars often encounter peculiarly involved problems in dealing with such chronological material, for the evidence is usually preserved in such accidental fashion that important data are either incomplete or ambiguous, when they are not missing altogether. Even ancient scholars had the same problems; and this paper will describe an ancient confusion and the difficulties it has given to modern researchers. Every

student of the problem has proposed a different solution, and still a new one will be offered here.

Antioch in Syria had its own era, in which the year began, with the introduction of the Julian calendar, on October 1st. There happens to be preserved curious evidence of the peculiar consequences, on at least one occasion, of a reform in this calendar.

The reform itself was a simple and sensible one. The New Year was simply shifted from October 1st to September 1st so that the year of the era now coincided with that of the indiction cycle, a change which was easily made and proved to be a great convenience in reckoning contemporary dates.

Just when this change was made we do not yet know. The archaelogists may some day find an inscription which will show the exact year of the change; this is to be looked for especially in the excavations now in progress at Antioch. All we know at present is that a Greek inscription of A.D. 449 records an event in September, and uses synchronisms which show that the year of Antioch still began on October 1st. Then there is a gap in the inscriptions whose synchronisms can be tested for this question, until A.D. 483, when an inscription shows that the year of Antioch began on September 1st, and all later inscriptions confirm this.

In just this period when the change is known to have taken place, there was an earthquake at Antioch. The principal extant records of this are found in two local histories written from 100 to 150 years after the event. They both date it in September, the month which would be shifted from one year to the other by the calendar change; and they both place it in the year 506 of the local era (A.D. 457/8). But the authors give other synchronisms, and here they disagree. One, John Malalas, puts the event "in the consulship of Patricius"—but this was A.D. 459. The other, Evagrius, who quotes Malalas' account, places the disaster in Indiction XI (A.D. 457/8) and in the second year of the reigning emperor, Leo I, who came to the throne on February 7, 457.

Evagrius' synchronisms would agree on September 457 as the date if he reckoned Leo's second year from the indiction which followed his accession (September 1, 457) instead of from the first anniversary of his accession (February 7, 458)—and there is evidence that this was done by other historians—and if he reckoned the year 506 of the era from September 1, 457. In any case, however, his reckonings would still be quite different from Malalas'. Furthermore, Evagrius places the event on Saturday, September 14th, and the 14th was a Saturday in the Julian calendar in 457, while Malalas places it on Sunday, September 13th, and the 13th was a Sunday in 459.

Accordingly the three modern scholars who have dealt with the problem (Ideler, 1826; Clinton, 1850; Lietzmann, 1908) concluded, in various ways, that either Malalas or Evagrius made a mistake (for which they can suggest no valid reason), and they assign the disaster to either 457 or 458. They conclude that this evidence shows that the year of Antioch began at this time on either September 1st or October 1st. One scholar alone, Enrico Noris, who wrote a book on Syrian chronology in 1696, perceived the possible meaning of the problem. He understood that instead of concluding that the evidence *must* point to 457 or 458, one ought to start by inquiring what it might show if one assumed that the year could have begun at this period on either September 1st or October 1st. In Noris' time there was not available all the material that we have today, and so he was forced to conclude that the problem was insoluble. Nevertheless, his approach points the way to the real solution. Noris saw, of course, that the data given by Evagrius would place the earthquake in September 457 if Evagrius supposed that the year 506 of Antioch began on September 1st, as it did in his own time (here the regnal year would be, to Noris, simply an error). If the earthquake did occur in September 457, Noris observed, Malalas could alter the date, or add independently data which would place it in 459. At the same time, however, Noris perceived that it would be possible to suppose that the earthquake was originally dated in September 458 by reference to September of the year 506 of Antioch, and that the dates

given by Malalas and Evagrius reflect two different misunderstandings of the original date. Thus Malalas could add, to the year 506 of the era, the consulship of Patricius (A. D. 459), and add (or alter) the day of the month and day of the week so as to make them true for 459, while at the same time Evagrius, through uncertainty or ignorance, could mistakenly take the original date, September 506 of Antioch, to refer to September 457, likewise adding data which would indicate this month and year.

The modern scholars have ignored or misunderstood Noris' rather discursive Latin treatise, and like him they did not know the evidence of the inscriptions. But the inscriptions, and two additional literary sources, now indicate the real cause of the problem. The inscriptions show that the earthquake occurred at about the time of the calendar change, and that therefore the problem of the date of the earthquake, since it occurred in September, must be studied in the light of this change. And there is a Syriac chronicle, the *Liber Chalifarum* ("The Book of the Caliphs"), which records *two* earthquakes at Antioch, one in 457 or 458, the other in 459. Another Syriac source, a biography of St. Symeon the Stylite, mentions an earthquake in 459. Therefore, since the reckonings in Evagrius could refer only to 457 or 458, while one of Malalas' two reckonings (by the year of Antioch) would refer to 457 or 458, and the other (by the consul) to 459, it looks as though Malalas had confused two disasters dated a year or two apart. Malalas was not a careful writer, and compiled his work rather mechanically from a number of different sources, without close attention to details. Evagrius, finding only one earthquake recorded in Malalas, would verify his dates and, concluding that his predecessor had made a mistake, would reject those parts of his data which indicated 459 and thus would adopt 457 or 458 as the date.

As soon as one realizes that something of this sort might have happened, the reason for the confusion is not far to seek. Either Malalas or Evagrius (or both) may not have known of the calendar change; or if they did, they may not have known precisely when it occurred. More important, they very likely had no way of knowing whether one of their sources used the new reckoning, or mistakenly adhered to the "Old Style." It is easy to imagine how Evagrius may have been troubled by this point when he came upon the date in Malalas; he would have been doubly perplexed if, in addition to doubting the correctness of Malalas' data, he were not entirely sure that he could rectify the mistake. And so Malalas may have confused the two earthquakes in the first place because the calendar change made it uncertain, to him, in which year they occurred; and Evagrius, in checking Malalas' statements, may have perpetuated the error and (again because of the calendar change) may have introduced a new confusion by adding synchronisms of his own in an effort to fix the date correctly. Curious evidence of this survives in the way in which Malalas and Evagrius place the event on different days of the month and week (Sunday, September 13th and Saturday, September 14th): apparently they each either reproduced or adjusted dates of the month without making the necessary adjustment of the day of the week.

Lack of evidence makes it impossible, for the present at least, to fix the date of the earthquake exactly. But this disappointment is a small one in comparison with the discovery of such suggestive evidence of the difficulties which these ancient historians encountered, and of the way in which they tried to solve them.

NEW BOOK FROM ASSISI

Reviewed by the Rev. Edward S. Schwegler, D.D.

STUDIO INTORNO AL COMPUTO DEL TEMPO PER LA PROPOSTA DEL CALENDARIO PERPETUO INVARIABILE ROMANO. *Raspino Don Francesco. Varallo Sesia. 1937.*

THE AUTHOR of this somewhat curious work is a canon of the Basilica at Assisi and rector of the Municipal College of Saluzzo, in northwestern Italy. The book is published with ecclesiastical approval.

What is the "Perpetual Unchangeable Roman Calendar?" Essentially, it is The World Calendar with variations. The supplementary days are called *Kot* and *Skisti*, Aramaic for "twice" and "three times." *Kot* would be placed at the end of the year in ordinary years, and *Skisti* after *Kot* in leap years. The quarters are equal, and have 31-30-30 days each.

But our author would institute an additional change, and one much more radical than the above. He would have the year begin with the winter solstice, and each quarter begin similarly with the solstice or the equinox. To bring about such a theoretically excellent end, he would emulate Gregory XIII and drop 11 days from the calendar. At the time of change, the year would end on December 20; and then would follow immediately January 1. The feast of Christmas, being thus summarily eliminated in the year of change, would be anticipated and celebrated beforehand.

Such a step would make the equinoxes and solstices come 11 days later in the calendar: approximately on the first of January, April, July and October. The year would then begin exactly where the days get longer, and spring, summer and autumn would be analogously situated.

Just why this plan should receive the title of *Roman* is not clear from the book. The author truly says, quoting the words of one Pio Emanueli: "The Julian-Gregorian calendar, conceived by Romulus in Rome, perfected by Numa Pompilius in Rome, reformed by Julius Caesar in Rome, was made well nigh perfect by Gregory XIII in Rome. . . . When other peoples lived in barbarity or were absent from history, Rome gave to the world its calendar." True enough. Yet even as regards the Gregorian calendar, as we have it, one may well ask why the Egyptian solar calendar, upon which Julius Caesar based his reform, is so frequently overlooked by our Italian brethren, and why is the present suggestion Roman? Probably because the plan was first brought forward at the Roman Congress of the International Astronomical Union in 1922.

In 1926 a special committee of the League of Nations declared very definitely against transposing the equinoxes and solstices in the following terms: "The Committee was of opinion that it could not recommend any

reform designed to make the year open on December 22 in place of January 1, since the undeniable advantage of the civil year practically coinciding with the astronomical year as reckoned from the winter solstice certainly would not compensate in most people's opinion for the very serious disadvantages inseparable from the change, i.e., the confusion inevitably created by dropping 10 days. This confusion would be specially felt in those countries which had very recently adopted the Gregorian calendar. In addition, the year in which these 10 days were dropped would be of no value whatever for the comparison of statistics of any kind, and particularly statistics relating to economic and social life."

The present work is therefore not a little out of date with its suggestion. Further, its arguments are not always to the point. For example, it dwells upon the fact that at the time of the solstices the days are of nearly the same length for quite a period, so that the advancing or retarding of the equinoxes would not make any practical difference. This is so, but it is not apposite to the proposal at hand. That proposal is to drop 11 (10) days, and thereby bring the dates of the equinoxes and solstices so much ahead of their present place in the calendar—but not of their place in the *tropical year*. If, for example, the plan demanded that December 23 be called "New Year" in our present calendar, without any dropping of days, and that January 1 be just an ordinary weekday, then there might be some point in arguing that the time of the solstices, for all practical purposes, is spread over a number of days. But dropping the proposed number of days would simply leave the solstices at their correct astronomical position in the tropical year, though it would advance them in the calendar.

Similarly, the precession of the equinoxes gives no justification for placing the equinoxes 11 days later in the calendar, as this book seems to imply. The precession of the equinoxes does not mean that the *time* of the equinoxes is travelling backwards in the tropical year (which is the year measured by the calendar). It merely means that, year after year, the sun reaches the point of the equinoxes some 20 minutes earlier than it would if the earth's axis did not "wobble." And this loss of time is to be compared with the *sidereal* year, not with the tropical. Therefore, to adduce the precession of the equinoxes as justification for a transposition of the equinoxes in the calendar is beside the point.

Even if there existed a displacement of the equinoxes in the calendar (which would be absurd, since the tropical year may be defined precisely as the time from equinox to equinox, and since our calendar keeps step with the tropical year almost exactly), the above argument would not hold water because, again, the dropping of the 11 days, whilst giving the equinoxes a different date, would leave them in the same relative position which they had previously.

The plan under discussion would place Easter on its new April 1, which

would also be the new spring equinox. No one will deny that it would be very fitting to have Easter, feast of the Resurrection, coincide with the first day of spring. But the appropriateness is purely theoretical and sentimental. Practically, it would mean very little. The fixation of Easter is the important thing. Place Easter on an unchangeable date in a fixed calendar, and all the inconveniences of our present wandering Easter would disappear.

Aside from these crucial points, which the reviewer hopes he has properly understood, Don Francesco's book gives a good deal of solid, general information about various divisions of time, the motions of the earth, the phases of the moon, etc. And it is interesting to run across the Italian equivalent of our "Thirty days hath September."

> Trenta giorni ha Novembre,
> Con April, Giugno e Settembre;
> Di vent'otto ve n'ha uno,
> Tutti gli altri ne han trentuno.

Generally speaking, the present work is valuable but again one must deplore the fact that the book, like a good many others on the subject, introduces proposals for further needless "improvements" and identifies them with calendar reform. To "reform" our present calendar only two things are necessary. All the days of every month should have the same date each year, and all holidays should likewise have an invariable date. By common consent, the first end is best to be achieved through the use of "supplementary" days, and the second by stabilizing the date of Easter. All other proposals—shifting the equinoxes and solstices, changing the names of the months and the days of the week, altering the rules for leap years, etc.—are quite superfluous, and should not be identified with the current movement to reform the calendar. Furthermore, every work on this subject ought to insist on the fact that stabilizing the calendar and stabilizing Easter are two distinct proposals, each of which could be realized without the other.

OBITUARY NOTES

DR. CLARK F. ANSLEY, Editor-in-chief of the Columbia University Press and of the Columbia Encyclopedia, died on February 14, in Solebury, Pa. He was 69 years of age. He had been a member of The World Calendar Association for several years.

Other deaths among the membership of The World Calendar Association include: *W. G. Luckhardt,* Mining Engineer, Oakland, California; *William I. MacClement,* Professor of Biology, Queens University, Kingston, Ontario; *William B. Rich,* Secretary of the Chamber of Commerce of Waterbury, Vermont; *Dr. Alex Ernszt,* Member of the Hungarian Parliament; *Dr. Johannes Tews,* Director, Society for Popular Education, Berlin; *Hon. Frederick Steiwer,* U. S. Senator from Oregon; *Edward P. Costigan,* former U. S. Senator from Colorado; *Dr. Frank H. Vizetelly,* Editor of the Standard Dictionary; *Louis Carroll Root,* New York investment banker.

CURRENT PRESS COMMENT

Internationalism

Christian Science Monitor

There is no patriotism like international patriotism. In the reformed calendar sponsored by The World Calendar Association and endorsed by the League of Nations, the last day of the year is suggested for an international holiday. It would be fine if we had such a day and observed it with as much fervor as Americans do Memorial Day.

Why Not?

Long Island City (N. Y.) Star

We looked at the calendar today and discovered it was the same silly old calendar we've been telling time and the seasons by since we were very young.

A year ago, and the year before, and the year before that—yes, time and time again—we have said that our calendar is an awkward contrivance made up of 12 months of assorted lengths, varying from 28 to 31 days. We have pointed out that our calendar gives us four quarter-years, likewise of assorted lengths. And we have said: Let's toss it in the ashcan.

If anybody had the patience to read these editorials, nobody has ever done anything about it. The old calendar is still with us.

Make Holidays Count

Norman (Okla.) Transcript

Social conscience on the part of the American people can be developed in the special dates of our calendar, those which are the symbols of greatness of various types, Rabbi Martin Weitz told an audience at the University auditorium last night.

Dr. Weitz named special occasions, such as Independence Day, birthdays of famous Americans, and other special dates to emphasize his point.

The speaker advocated the adoption of the new "World Calendar," to replace the present Gregorian calendar, to simplify the matter of recording and remembering dates.

Highly Desirable

Jamestown (N.Y.) Journal

That the present calendar is confusing there can be no doubt. A more uniform calendar would be highly desirable.

It is difficult to overcome the inertia of custom and habit. For instance, all must agree that the metric system of weights and measures is far more sensible than our present confusing system. More than 50 years ago this system was legalized in the United States, yet today we still retain the old cumbersome system.

Many people had hoped that the new calendar could be adopted by 1939. Now it appears destined to wait at least two or three years.

Why Not Change?

St. Lawrence University Bulletin

Although we of this day and age consider ourselves scientifically minded, yet we cling tenaciously to a calendar which is 2000 years old. Why shouldn't we change it to suit our modern needs in a wholly changed world?

A calendar, after all, is only a convenience. It should be our servant and not our master. Do we irrationally cling to the ancient calendar because in our unconscious minds we still adore moon-gods?

Why adhere to something that doesn't serve its purpose any longer? "God's time" is no longer an adequate charge to be made against calendar revision, for "God's time" has been revised and changed repeatedly during the centuries.

Definite Improvement

Joplin (Mo.) News-Herald

The great modern demand for simplification and standardization is the calendar. It seems absurd that we continue to tolerate a calendar that is ill-balanced, when a calendar has been worked out that is an immense improvement in the matter of simplification and practicality in use. It is termed The World Calendar.

EXCERPTS AND REVIEWS

Egypt's Time History

By EMIL LUDWIG

From *The Nile*, Copyright 1937, published by the Viking Press, Inc., New York

FOR AEONS these sons of the desert must have observed the stars, seeing that, 1000 years before the first Pharaoh, they had already invented the calendar. It has been proved that they possessed it in the year 4236 before our era. Since they divided the year into three parts, Flood, Seedtime, and Harvest, and into 12 months of 30 days each, a few days remained over every year, which had accumulated in 500 years to such an extent that the Flood season actually fell in harvest-time.

To eliminate this error—that is, to bring the whole year round to its starting-point again—it would take 1460 years; and in the epochs of Egyptian history, this "wandering year" first arrived in 2776 under Pharaoh Zoser, who built the step-pyramid, then again in 1316 under a successor of Ikhnaton, and still in time to find the Pharaohs in the Nile valley, but the third time the wandering year came round, it encountered Ptolemy, the greatest mathematician of his time, in 144 A. D.; the fourth time it met the Mamelukes, and there were still two centuries to wait for General Bonaparte. So great are the epochs of the people who invented our calendar more than 60 centuries ago. They are like the halls of some vast castle through which there sounds the hidden rushing of a river.

It was the river too that fostered the knowledge of the hours, in the lapse of which the water-wheel could raise a certain quantity of water. And the Egyptians invented the sundial for the day-time, and the water-clock for the night in the form of stone basins with the scale of hours marked on the inside. The hours ran through holes which varied in size according to the season and the length of the night. And since the courses of the stars were known, they were pressed into service too. Two priests would sit facing each other, due north and south, each with a sighting-glass and a table on which he had entered the stars for every night thus each could calculate the hour from the position of the other relative to a star measuring from his right elbow and left ear. What a majesty of repose! And what a turmoil if one of these priests, sitting and reckoning, hated the other!

While they calculated the moon and stars from the pylons of their temples in their realism they sought no prophecy in the aspects of the stars, as the Babylonians did; at all times, they wanted to know simply what was, in order to act upon it, and though they used to trace the course of the stars in a dead man's tomb, they did so only for a fortnight in advance, the rest he had to do himself—he had time. They recorded the 12 houses of the zodiac and discovered and named five planets during the New Kingdom; later men took 3000 years to discover two more. To divide the fields on the Nile by canals, they invented the foot and the ell and they are said even to have understood the decimal system, the advantages of which the English have not even yet managed to appreciate.

Common Ground

By THOMAS J. WATSON

President, International Chamber of Commerce

Reprinted from the magazine "Think," published by International Business Machines Corp.

THE GREATEST desire of all right thinking people is enduring peace for all mankind. A "common ground" of interest upon which all nations may meet assured of fair play in the pursuit of that ideal, has been their supreme objective.

Watt's discovery of how to apply the power of steam, followed by Stephenson's locomotive and Fulton's steamboat, provided the first broad area of "common ground" to receive international recognition. These new forms of transportation bringing closer together the peoples of far places gave birth to an interchange of ideas and ideals between peoples and nations that hitherto had been unknown.

Morse's telegraph and Bell's telephone made of communication a still closer bond

tween peoples and nations, and Edison's ectric light rolled back the hours of rkness to make way for the quickening mpo of human activity. The automobile me into existence, changing the habits millions of people and then Marconi d the Wright brothers gave wings to ought and deeds for all people.

World trade, as the result of these and any other equally great developments, ally achieved a significance which found s truest expression in an astonishing provement in the standards of living all civilized countres; and in a very ecific sense the world was at peace.

Then the World War came, and the "com-on ground" set up by world trade based on the proper flow of goods and ser-ices across all borders, on a basis of utual fairness and profit, became first a ariable and finally a vanishing asset of vilization.

Many programs of action aimed to-ard the re-establishment of world peace ave been enacted since the close of the reat war. Those of political, social or piritual scope have not been entirely suc-essful; but the efforts of statesmen, ankers, business men, and industrialists promote world trade along lines that ecognize the interdependence of all coun-ries are a great and constantly growing orce for peace. The interchange of men nd methods, ideas and ideals thus en-endered has brought many of the world's eoples closer in a spiritual way and on a ommon ground of understanding.

Irregularities of 1939

By Brendan McManus
Secretary, Rational Calendar Association, London

NEW YEAR'S Day for 1939 fell on a Sunday, so that this year there are 2 Saturdays in the first quarter, 13 in he second, 14 in the third, 13 in the ourth.

For all those employers who consult veekly figures ending Saturdays, accumu-ated quarterly for their information, this vill produce extremely misleading results. Statistical comparisons with 1938 will be ven more chaotic. January and October vill each have five Sundays and four Sat-rdays as against five Sundays and five Saturdays in 1938; April and December five and five against four and five. May four and four against five and four, September four and five against four and four. Comparative figures for output, sales, costs, traffic returns, etc., for these six months will be worthless.

These are only some of the defects of the present jigsaw calendar which would have been remedied had the League of Nations' plan for reform, which was to have been brought into operation on January 1st, 1939, secured the proper attention from all Governments.

Mobility of Easter

By George Burdick
Editor, Newport (R. I.) *News*

IT would be useless, here, to discuss the ramifications of the setting of Easter Day. It is enough to say that, instead of being based on the solar system from which the Gregorian calendar under which we now live is calculated, Easter falls on a day determined by the shining of the moon. So we have the most important remaining movable feast wandering over an ambit of 35 days.

Aside from sentiment and tradition, what reasons are there for this holy day of Christian Church wandering back and forth over more than a month of calendar? Other church days, such as Christmas, are immovable. There have been crusades in and out of ecclesiastical circles, to reach some settlement agreeable to all concerned.

To those who seek a fixed date for Easter, we commend consideration of the proposed perpetual calendar. Under it, Easter could really be fixed.

The day might be set as the second Sunday of April. This, under the new calendar, would always be April 8. The simplication would be far reaching. Courts, parliaments, schools and colleges could make their arrangements accordingly and for all years to come. Thus would the ecclesiastical year be simplified. It would be possible for the entire Christian community, Roman Catholic, Orthodox and Protestant, to observe what is by origin and development a continuous festival on the same day. To those who would have Easter an immovable feast, consideration of the proposed World Calendar is suggested.

FROM THE MAIL BAG

If any change is to be made I would prefer the 12 to the 13-month plan.—Frank B. Jewett, Vice-Pres., Am. Tel. and Tel. Co., New York.

This *Journal of Calendar Reform* is a splendid periodical. I am keenly interested in the entire subject.—Rabbi E. G. Gottheif, Chaplain, U. S. Army, N. Y. C.

I can see no reasonable objection to calendar reform, while many advantages are very obvious.—Laurence E. Tomlinson, librarian, Library of Congress.

The world has moved far along in its application of rational thought to industry, agriculture, business and government since the days of Augustus. Surely our thinking has advanced to the point where a rational simplification of the calendar can be adopted.—H. S. Rogers, Pres., Polytechnic Institute, Brooklyn.

I am interested very much in The World Calendar.—Dr. Thomas M. Rivers, Rockefeller Inst., N. Y. C.

A regular calendar such as The World Calendar would offer a solution for many of the little irritating problems of internal organization in a University program.—Dr. K. P. R. Neville, Univ. Western Ontario, London, Ont.

The *Journal of Calendar Reform* has given me a better and more ample knowledge of the program, for the success of which you have my sincere wishes.—F. V. Treserra, Secy., Mexican Embassy, Washington, D. C.

Am heartily in favor of revised calendar.—Dr. I. Greenwald, Larchmont, N. Y.

Urgent need for calendar modernization is obvious, and the superior merits of the 12-month World Calendar, with respect to practicality and ease of introduction, must commend it to any intelligent judgment.—C. C. Williams, Pres., Lehigh Univ.

With increasing interest I have followed your highly intelligent efforts to advance the movement for calendar reform.—Prof. W. R. Sharp, Univ. of Wisconsin.

After reading your World Calend plan I am impressed with its advantag over that of the 13-month idea.—M George T. Palmer, Springfield, Illinois.

Your article on "Educational Vie points" ought to convert to calendar r form every college or university admini trative officer who has anything to do wi an academic calendar.—S. W. Canad Registrar, Univ. of Mo., Columbia, Mo

I hope to see your efforts succeed so with the adoption of a more rational ca endar.—P. L. Dupont, Uccle, Belgium.

As a sociologist, I am keenly intereste —Dr. David Snedden, Prof. Emeritus, C lumbia Univ., Palo Alto, Calif.

Our Government should cooperate wi others in the 12-month plan.—H. S. Wi gins, Actuary, Lincoln, Neb.

For a long time I have been interest in calendar reform without realizing a association for this purpose was in exis ence.—Raymond H. Saal, Textile Man facturer, New Orleans, La.

I have long favored some such refor in our calendar.—J. O. Engleman, Pre Kent State Univ., Kent, Ohio.

The proposed calendar appears to n to be a very sensible one. It would lea the calendar in perfect balance and esta lish a definite day of the week for ea day of the month.—A. C. T. Beasley, Bea ley and Co., Memphis, Tenn.

I hope this reform which stands for better understanding of nations will con into practical shape.—E. Fougere, Ass Nationale d'Expansion Economique, Pari

For the past three or four years in m classes in Astronomy I have been stres ing the new 12-month World Calendar.— Prof. R. C. Huffer, Beloit College, Beloi Wis.

I am interested in calendar reform fro the point of view of Accounting and th analysis of weekly, monthly and annu statistics. As you probably know, th present calendar is badly suited for com parative statistics.—R. Henderson, Vic Pres., Southern Calif. Associated New papers, Los Angeles.

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ARGENTINA: Comite Argentino del Calendario Mundial, Dr. C. D. Perrine, Chairman, Juarez Celman (F.C.C.C.)

BELGIUM: Belgian National Committee on Calendar Reform, Professor M. Dehalu, President, l'Université de Liége, Liége.

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CANADA: Rational Calendar Association, Lt. Col. J. Murray Muir, Secy., Room 218, 2 College St., Toronto 5.

CHILE: Comite Chileno del Calendario Mundial, Prof. Alberto Cumming, Chairman, Calle Manuel Rodriguez, Santiago.

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ENGLAND: Rational Calendar Association, C. David Stelling, Director, 38, Parliament Street, London.

FRANCE: Comité National pour la Reforme du Calendrier, Senateur Justin Godart, Président, Paul-Louis Hervier, Secy., 5, Rue Bernoulli, Paris.

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SPAIN: Spanish Calendar Reform Committee, Father Luis Rodes, S. J., Chairman, Ebro Observatorio, Tortosa.

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URUGUAY: Comite Uruguayo del Calendario Mundial (Igualmente del Paraguay), Prof. Alberto Reyes Thevenet, Chairman, Liceo de Ensenanza Secundaria Hector Miranda, Calle Sierra 2268, Montevideo.

VENEZUELA: Comite Venezolano del Calendario Mundial, Senora Maria Luisa Escobar, Chairman, Avenida Este, N. 43, Caracas.

EDITORIAL PARAGRAPHS

The World Calendar Association intends to keep right on plugging for the improvement of the calendar, and our best hope is that we live to witness the triumph of this cause.—Providence (R. I.) *Bulletin.*

Under the plan for a perpetual World Calendar, all of Canada's national holidays would fall on either Friday, Saturday or Monday.—Toronto *Globe and Mail.*

We like to read the *Journal of Calendar Reform,* because it is put out by a group who maintain a temperate attitude and realize that the calendar cannot be reformed overnight.—San Francisco *Commercial News.*

Since man first began to take an interest in his surroundings he has found it necessary to devise some means for arranging the long succession of days and nights into more convenient divisions for everyday use.—Gloucester (England) *Citizen.*

Current proposals for calendar reform take the last few kinks out of a calendar arrangement that for the most part has served us long and well.—Lansing (Mich.) *State Journal.*

Economic life in general, and transportation in particular, have realized more and more in recent years the imperfections of the present calendar.—Berlin (Ger.) *Zahlungsverkehr und Bankbetrieb.*

Why do we go on year after year, without effort to rid ourselves of the inaccuracies and annoyances in such an intimate and constant companion as the calendar?—Syracuse (N. Y.) *Herald.*

Once we adopt the reform, every religion and nation will be able to arrange for its holidays on the basis of its beliefs; and it will be able to dispose of this matter once and for all.—Rome (Italy) *Sapere.*

Perhaps the League of Nations could restore part of its prestige by causing the nations to adopt a calendar which would enable the harassed peoples to have their political headaches on the same day and date.—Chattanooga (Tenn.) *Times.*

Lord Onslow yesterday told the House of Lords of an impending reform of the calendar, on which international agreement is rapidly being reached.—Yorkshire (England) *Evening Post.*

Most particularly such a calendar applied to the affairs of the various units of Government would be most helpful.—Grand Rapids (Mich.) *Herald.*

Perhaps the Boards of Trade could induce the Dominion Government to bring this country into line with The World Calendar, and so hasten the day of its adoption.—Orillia (Canada) *Packet and Times.*

Our crazy system of measuring time brought us an election day at the latest it could possibly fall, and a Thanksgiving Day in the earliest possible date. It also made Armistice Day fall in mid-week, with great interruption to ordinary business.—Lowell (Mass.) *Courier-Citizen.*

It has occurred to us that the subject of calendar reform should be of particular interest to educationists.—Toronto (Canada) *School Progress.*

Dr. Martin Weitz, a rabbi who is making a spirited fight for a standardized calendar, spoke here last night, advocating the substitution of the new World Calendar for the old Gregorian system now in use.—Norman (Okla.) *Daily.*

As compared with any other proposal for calendar revision, The World Calendar offers an adjustment that can be made with a minimum of disturbance.—Oskaloosa (Iowa) *Herald.*

The time is ripe for a world movement on behalf of calendar reform.—Waterbury (Conn.) *Democrat.*

Calendar reform is more advanced than is generally realized.—Manchester (Conn.) *Union.*

The advantages of The World Calendar seem worth attention. The proposed change is growing in favor among many nations.—Newport (R. I.) *News.*

Notwithstanding present chaotic world conditions, the movement for a reform of the calendar is making steady headway.—Stamford (Conn.) *Advocate.*



After reading please pass on to others.

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Journal of CALENDAR REFORM

SECOND QUARTER

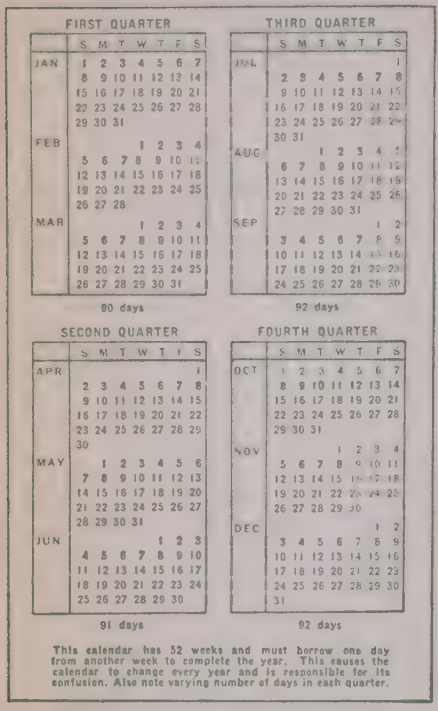
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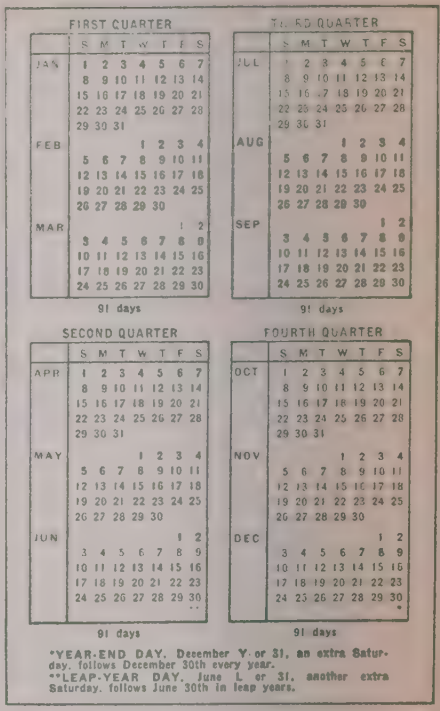
PRESENT GREGORIAN CALENDAR

PROPOSED WORLD CALENDAR

In 1939 both calendars begin the year with Sunday, January 1st.



This calendar has 52 weeks and must borrow one day from another week to complete the year. This causes the calendar to change every year and is responsible for its confusion. Also note varying number of days in each quarter.



*YEAR-END DAY. December 31, an extra Saturday, follows December 30th every year.
**LEAP-YEAR DAY. June 31, another extra Saturday, follows June 30th in leap years.

EACH YEAR DIFFERENT

This calendar is always different from year to year.

The quarters are unequal in length.

Each quarter begins and ends on a different day of the week.

Each month begins and ends on a different weekday.

The months have a varying number of weekdays.

Each year begins on a different weekday.

This calendar is unbalanced in structure, unstable in form, and irregular in arrangement.

SOON YOU WILL BE DISCARDING THIS OBSOLETE CALENDAR.

EACH YEAR THE SAME

This calendar bears no year-date and is good for every year.

The quarters are equal in length.

Each quarter begins on Sunday and ends on Saturday, contains 3 months—13 weeks—91 days.

Month dates always fall on the same weekdays.

Each month has 26 weekdays—plus Sundays.

Each year begins on Sunday.

This revised calendar is balanced in structure, perpetual in form, harmonius in arrangement.

SOON YOU WILL BE USING THIS UP-TO-DATE CALENDAR.

MRS. SAIDIE ORR DUNBAR

President, General Federation of Women's Clubs

Humanitarian, educator in public health, leader in women's organizations in America, dauntless warrior against tuberculosis, defender of children, exponent of home making, pioneer of public health nursing, a woman of ability and dedicated life, demonstrator of woman's capacity for citizenship, with skill and courage making the world about her safer from the threat of disease and happier for all.— From the citation read at Linfield College (Oregon) on the conferring of the degree of Doctor of Humane Letters upon Mrs. Dunbar.



MRS. SAIDIE ORR DUNBAR

President, General Federation of Women's Clubs

(See Editorial on opposite page)

LET US ENCOMPASS THE EARTH WITH A NEW ORDER OF TIME

VOL. IX SECOND QUARTER 1939 No. 2

ON May 10th in San Francisco the General Federation of Women's Clubs in annual convention, representing a membership of 2,000,000 American women, approved by a good majority a resolution for The World Calendar. It was the first time in history, Miss Achelis told a Chicago audience, that woman has actively aided man in improving the measurement of year-time. All previous calendar adjustments had been accomplished through the activity of man.

With the General Federation's action, woman in the modern spirit has established herself as a co-worker with man in sponsoring the bringing of order and harmony into our time-system. As a means toward promoting international amity and cooperation, The World Calendar appeals to woman because of her innate love of peace.

The pronouncement by the General Federation, quoted on page 51, should gratify all workers for calendar reform, especially since it states in closing that the United States Government cooperate with other governments toward action for the establishment of The World Calendar.

The Federation's effort for calendar revision originated under the administration of Mrs. Roberta C. Lawson two years ago, and was successfully accomplished under Mrs. Saidie Orr Dunbar's presidency. Mrs. Rowland H. Latham, Chairman of the Calendar Committee, was ably supported by Mrs. Frederic Beggs, Chairman of the Department of International Relations; Mrs. Gustav Ketterer, Chairman of the Department of Legislation; Mrs. F. H. Clausen, Chairman of the Department of American Citizenship, and Dr. Clara B. Burdette, founder and "Mother" of the California State Federation of Women's Clubs, Hon. Vice-President of the General Federation and Chairman of its Historical and Continuation Committee.

The General Federation's action should challenge organized women of other countries to take similar action so that The World Calendar can be placed in operation on the last day of December, 1944.

THE EDITORS

Journal of
CALENDAR REFORM

April, May, June
1939

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Editors: CHARLES D. MORRIS CHARLES C. SUTTER
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RESOLUTION

Passed by the

GENERAL FEDERATION OF WOMEN'S CLUBS

San Francisco, California

May 10, 1939

WHEREAS, It is generally recognized that the present calendar could be replaced by one more suited to the needs of our modern day and age, thus effecting an economy in time, cost and energy; and

WHEREAS, The members of the General Federation of Women's Clubs have given this subject their careful study and consideration, therefore be it

RESOLVED, That the General Federation of Women's Clubs in Council assembled at San Francisco, May, 1939, endorse calendar reform on the perpetual twelve month plan of equal quarters, known as THE WORLD CALENDAR, and be it further

RESOLVED, That the United States Government be requested to cooperate with other Governments in bringing about Calendar Reform with a view to making THE WORLD CALENDAR internationally operative, whenever the time for such cooperation is deemed proper by Governmental authorities.

Presented by:
MRS. ROWLAND H. LATHAM, Chairman,
Committee on World Calendar Reform.

Approved by:
MRS. FREDERIC BEGGS, Chairman,
Department of International Relations.

MRS. GUSTAV KETTERER, Chairman,
Department of Legislation.

MRS. F. H. CLAUSEN, Chairman,
Department of American Citizenship.

WOMEN APPROVE WORLD CALENDAR

Address Before Chicago Woman's Club, May 24, 1939

By ELISABETH ACHELIS

President, The World Calendar Association

IN San Francisco this month a very significant event took place. Its importance is little realized as yet by the majority of our people. And the press, too, gave it scant notice. It briefly stated in one short sentence that the resolution for The World Calendar was approved by the General Federation of Women's Clubs at the morning session of their 19th Council meeting, Wednesday, May 10th.

Now what was significant about this? Other organizations and countries had approved the perpetual World Calendar of 12 months and equal quarters; why then was the action taken by the General Federation so noteworthy? It was remarkable because it was the first time in all history, which covers a span of 60 centuries, that woman recognized the privilege and accepted the opportunity to speak for an improved calendar.

Previous to San Francisco, reforms of the calendar, of which there were five, had been solely in the hands of men. Scientists, priests and rulers were the arbiters of the calendar in the past. Today, however, where the calendar plays an important part in all our civil, social and economic affairs, the calendar is as important to woman as to man. It belongs to the world. No longer is it a scientific and religious institution only. No longer can woman be excluded from voicing her opinion and working for an improved calendar. No longer is woman like proverbial Lot's wife, traditionally looking backward, standing still, indifferent or rebellious to change. Cooperation between man and woman is vital if real progress is to be made in our world today. Time, the calendar, belongs to all mankind, to all nations and to all peoples. It is perhaps the most universal and uniting force in our modern life today, for time knows no isolation and recognizes no discrimination.

It was eminently fitting, then, that woman should have spoken so emphatically for The World Calendar, which in arrangement brings order out of disorder, harmony out of confusion, and stability out of its wanderings. The very nature of the proposed changes in the calendar is a challenge to woman. For woman stands for order and harmony. Her experience in works for civil betterment, improved public health, social uplift and educational advancement has ever revealed her to be a constructive force. She could not, therefore, lose sight of or be neglectful of the human

benefits inherent in The World Calendar. And thus on the most westerly coast of our country this influential group of women, coming from every state in the Union, supported The World Calendar. By so doing, woman proudly allied herself with man in bringing nearer to fulfillment a more orderly measurement of time.

The measurement of our days and years is the oldest science that has come down to us through the ages. We are told that the establishment of the Egyptian solar calendar in 4236 B.C. is the earliest authentic date known in history. How peculiarly appropriate that this earliest-known historical date relates to the beginning of our calendar-time! Not only is this noteworthy of comment, but the Egyptians in their reform abandoned the previously used lunar cycle and established the solar cycle for their annual time-system. Since that day, the seasonal year, influenced by the sun, has ever been the determining factor in our calendar.

Without going into detail regarding the five previous reforms, it is significant to remark that each one was a distinct advancement over the last. Today, with our many modern improvements and discoveries, it is obvious that the calendar again calls for change, if it is to meet adequately our modern needs.

We mentioned that our calendar is disordered, confused and wayward. The week-days constantly shift their places with month-dates, weeks break awkwardly into the months, months are confusing in their irregular lengths, quarters and half-years are divided unequally, and the year always begins and ends on a different week-day.

Suppose that Chicago, situated in the State of Illinois, should constantly shift its place among the various 102 counties in the state. Sometimes it would locate itself in Cook County, then in Lake County, or in DuPage or elsewhere. Chicago would have no definite place within the state. It would change its location as a chameleon changes its colors. Now convert this condition of Chicago to our calendar. New Year's Day belongs to the calendar and to the month of January, but it shifts its place continually in the week. Sometimes it falls on Monday, then again on Tuesday, on Thursday or Saturday. Well, this condition in the calendar is not a mere supposition, but *is* an actual fact. Our calendar *is* planless; the dates wander aimlessly throughout week-days.

When we study the sky and the solar system from which we determine our day, night, season and year, we are impressed by the order and harmony under which our solar system functions. Each of the nine planets moves within its prescribed orbit around the sun. Each planet is free within its own orbit, lord and master in its own right. No one planet intrudes upon another, yet they all unite in forming one complete and harmonious solar system.

Now this same principle of order and harmony, wherein the various

calendar-units have their rightful place, are free to function in their own way yet all unite in forming a complete time-system, is achieved in a masterly manner in the new World Calendar of which I am talking today.

The regular arrangement of the 91 days, the complete 13 weeks, the 3 months with their more equable distribution of days, and the one seasonal or quarter-year division, all agree perfectly at the end of every quarter. No friction exists there. No one time-unit dominates over another. Each time-period is free and master within its own particular cycle of time. In each quarter the first month of 31 days has its established place by always beginning with a Sunday; the second month of 30 days denotes its central position by beginning with the middle day of the week, Wednesday; and the third or last month, also of 30 days, starts its round on the last full working day of the week, Friday, at the same time it closes its own cycle and completes the quarter on a Saturday. By this ordered and equable arrangement each month has 26 week-days besides the Sundays.

But the four equal quarter-divisions do not complete the solar calendar. The 365th day must find its place somewhere. To a devout and religious priest must be given credit for solving this seeming difficulty of the 365th calendar-day. Abbé Mastrofini of Italy more than 100 years ago conceived the inspiring idea of placing this day at the end of each year, as a Year-End Day, to be observed as an extra day outside the regular quarters, yet *within* the calendar-year itself. This extra day, placed on a double or twin Saturday and observed as a *world-holiday,* completes the calendar. Each year thus begins on Sunday, January 1st, and ends with the Year-End Day, December 31st or Y (the Y descriptive of its unique purpose and place). To begin the year always with a Sunday and end it with a double Saturday, an international holiday, is a notable feature of The World Calendar.

The 366th day in leap year, essential if our calendar is to conform with the seasonal rotation, is placed in mid-year after the completed second quarter. It is another double Saturday, the Leap-Year Day. It, too, is a world-holiday. The *gift* of one world-holiday in ordinary years and another one added in leap years is the ideal means by which the calendar becomes stabilized and ordered. And what wonderful possibilities arise in our minds when we contemplate these one or two world-holidays! Days which will create more mutual, harmonious and understanding conditions among nations and peoples throughout the world. Assuredly The World Calendar approaches very closely the harmonious pattern of the solar system, not made by man.

And it follows another divine analogy—that of the Holy City of the new Jerusalem. This city, as we are told in Revelation, lieth four-square and contains twelve gates with three gates to each of its four sides. Within this city grows the tree of life bearing twelve kinds of fruit, the leaves of

which are for the healing of nations. The leaves are comparable to the Year-End and Leap-Year Days which, in their cumulative effect as international holidays, encourage and invite world amity and world cooperation among nations—healing influences in our troubled and harassed world.

And what is the secret power of these two pictures just described, the solar system and the Holy City? It is ORDER; for only with order can harmony and equity be attained.

We know only too well that if in our home there is a member of the family who constantly disregards the order of the meal hour, order in attire and order in his or her bedroom or study, such disorder causes unhappiness, and the smooth running of the household is disturbed. It is the new-found order in The World Calendar which makes everything easy that heretofore has been difficult.

This order makes it possible for our holidays to be observed always on the same day and date. Christmas falls on Monday, December 25th. It takes little imagination to realize how our letter carriers, shopkeepers and trade will enjoy this regular and lengthened week-end holiday. And churches, too, will experience greater ease and will observe a more spiritual attitude surrounding this holiday when Christmas Eve, always falling on Sunday, offers a spiritual preparation for Christmas Day, thereby enhancing its meaning without detracting from its joy.

One of our national holidays, Lincoln's Birthday, falls on Sunday and according to custom would thus be celebrated on Monday. But there is another fortunate feature connected with this patriotic day. By observing Washington's Birthday on the original date, February 11th, which was altered when England adopted the Gregorian reform in 1752 (eleven days being entirely dropped from the calendar), Washington's Birthday may be observed once more on its actual date. February will then have a three-day week-end holiday. No longer will these two national holidays break awkwardly into the week, which is always a trial to schools and business.

Let me recall to you the strange situation resulting from our holidays last November. Our civil holiday, Election Day, fell on the last possible date upon which it could fall, Tuesday, November 8th. This was followed by Armistice Day, Friday, November 11th. In one week two week-day holidays broke into the smooth running order of business and schools. Two weeks later came Thanksgiving Day. This day fell on the earliest possible date for its observance, namely, Thursday, November 24th. In our erratic and freakish calendar-system we had a November in which three week-day holidays occurred within a brief period of 17 days.

Do you blame business, schools, families, peoples and country when they urge an improved calendar? This demand for change is a healthy and progressive sign. Anything else, procrastination, opposition or apathy toward it denotes a reactionary and narrow attitude not worthy

our generation and day. Assuredly our generation is worthy of accomplishing this change.

Family and business budgets will be simplified in the new and perpetual World Calendar. How easy it will be when weekly envelopes or monthly salaries are due on the same week-day and date, when insurance payments are due on regular days with their regular dates. And to business and to all those who must pay an income tax, the realization that the 15th of March, June, September and December will always come on Friday will greatly ease the arrangements of the paying of this civic obligation. The work of statisticians, treasurers and accountants will be greatly simplified.

Universities and schools under this orderly and perfected calendar will be able to arrange study schedules and vacation periods on a sensible running time-system, quite similar to our clock. Families and homes will rejoice at the easy planning and the regular occurrences of vacations that go hand in hand with this new time-measurement. And social engagements, too, will be simplified and be more easily remembered, with misunderstandings reduced to a minimum.

As for birthdays and any other domestic or national anniversary, these will be observed always on the same week-day and month-date. For all children born under The World Calendar, and for all national and world events in the future, the actual week-day of their occurrences will be established on the exact *day*, date, month and year. For the first time it will be possible to record the actual *day* on which any event occurred and thereby observances will be more complete and enjoyable. January 24th, my own birthday, for example, would always fall on Tuesday and that to my mind will give this day a greater value and importance, although as a matter of fact the original week-day of my birth, Saturday, could not be observed.

Yes, this is true, you tell me, but what about the three lost days, March 31st, May 31st and August 31st? How will people observe their "lost" birthdays? They will observe their so-called lost birthdays on the day before, similarly as is the custom followed today by those born on the 29th of February. In ordinary years these leap-day children celebrate their birthdays the day before, the 28th. All those who are born on the 31st day of March, May and August under our present calendar can also observe their birthdays the day before, the 30th day. Thus they will play a vital part in the reform and greatly contribute toward bringing law and order into the calendar.

Then we should not forget that what is lost in one direction is gained in another. By losing three old dates we gain three new dates, February 29th, 30th and April 31st. Think of it! Out of 365 days, three dates are actually changed in The World Calendar. Isn't that a remarkable demonstration of what a reasonable, sane and common-sense change will do, when heart, mind, soul and spirit all work together? The World Calendar is a

wholly fair-minded proposal for a constructive change, wherein all drastic, unnecessary and unreasonable confusion and difficulties are avoided. The World Calendar is one of those rare improvements in which the transition from the old to the new is accomplished with practically no confusion. This in itself is a fact worthy of comment. Order makes all things easy.

It was the new Pope, Pius XII, who in his first Easter message acclaimed, "There can be no peace without order." Our famous scientist, Dr. Robert A. Millikan, emphasizes the remarkable beauty and harmony of our universe that go with order. And a great industrialist, Owen D. Young, declared that it was his personal opinion that a lack of equilibrium was the underlying cause of our economic depression that has resulted in such world-wide unrest and uncertainty. And lack of balance is nothing else but a lack of stability and order.

That nations are awakening to this truth and are recognizing the benefits in the perpetual World Calendar is clearly shown in the character of the 14 governments who have officially approved this new time-system. Among them are Oriental China; Catholic Chile, Brazil and Peru; Protestant Norway; Eastern Orthodox Greece and Mohammedan Turkey. And in this connection one might well add the names of Mahatma Gandhi and Swami Omkar of India, who approve this universal World Calendar.*

And again we ask ourselves what has won for it this uniform approval coming from such diverse sources. It is nothing else but the inherent characteristics of The World Calendar itself—harmony, order, balance, stability, equality and comparability.

Our world today is desperately in need of some united action of agreement among nations. For it is only as nations meet on some common ground of accord, and not in competition and differences, that the world shall find harmony and security. When we realize that the force and movement of time affects every one of us in our family, business and professional lives, and in our social, commercial, national and international affairs, I believe we shall discover at least one cause of our present difficulty and unrest. By removing from our life the disordered and irregular Gregorian calendar and by replacing it with the orderly and simple World Calendar, we shall accomplish our objective for greater world harmony and security, thereby inviting better days.

Let us then all of us, men and women, with energy and strength unite to impress upon our government individually and collectively through our

*Among other international and national organizations who have endorsed The World Calendar are: London, British and Empire Chambers of Commerce; Chambers of Commerce of the State of New York and cities of St. Louis, Galveston, etc.; Institute of Radio Engineers; Mathematical Association of America; American Association for the Advancement of Science; American Academy of Arts and Sciences; Seventh American Scientific Congress; Labor Conference of American States; National Education Association; World Federation of Education Associations; Universal Christian Council for Life and Work; Protestant Episcopal, American Lutheran and Reformed Churches and others.

various organizations the urgent need for the adoption of The World Calendar.

It can be accomplished by the calling of an international conference by one great power, such as the United States, for example, or by several smaller nations working concertedly together, by 1943, earlier if possible. Concerted action and the drafting of a treaty at such an international conference would then be ratified by the various governments and The World Calendar would be put into operation on the last day of December, 1944. It is on the last day of *that* year, when December 31st falls on Sunday in the old calendar, that it can be transformed into the Year-End Day of the new calendar, by which The World Calendar can be put into operation on the next day, *Sunday, January 1, 1945.*

A world, united under one common and universal system of calendar-time, might well find the way toward agreement in other matters as well. The World Calendar lies beyond any such narrow confines as national ambition, special interest and political bias. It is a true welder of nations and peoples—*a great peace-maker for which mankind is looking today.* As the solar system unites the various planets under one harmonious system, as The World Calendar unites the various time-units under one harmonious calendar system, so the world can unite the various nations and peoples under one universal measurement of time without in any way calling for concession by one government to another. Come, let us unite and work for this peace-instrument which will bring a new order of time into our civilization and a new era of freedom into our life, wherein exist order and harmony with respect and consideration to all.

OBITUARY NOTES

ISHBEL, MARCHIONESS OF ABERDEEN AND TEMAIR, died in Rubislaw, Aberdeenshire, Scotland, on April 18th, at the age of 82. The Marchioness, as President of the International Council of Women, was interested in The World Calendar and aided in the dissemination of information on the subject.

MRS. MAYNARD LADD, one of America's outstanding sculptresses, died June 3d, at Montecito, Cal. For many years Mrs. Ladd had been interested in the calendar reform movement.

SAMUEL C. EBY, President of the New York Esperanto Society, died February 26th. Mr. Eby had long been interested in calendar reform and was active in its behalf among members of his organization, believing that a new World Calendar, like a new world language, would materially aid all nations and peoples of the world.

EVART ROUTZAHN, social worker and a member of the staff of the Russell Sage Foundation, died April 24th, at the age of 70. Mr. Routzahn had long been a member of The World Calendar Association, his membership dating from 1932.

OTHER deaths among the membership of The World Calendar Association include: *Isidor Ginsberg,* New York public accountant; *Rev. L. W. Steckel,* Milwaukee; *Mrs. Cary L. Barnhart,* Barnhart, Mo.

RADIO—AND TIME

By MARK HAWLEY

News Commentator, Mutual Broadcasting System

TODAY, Time is a saleable commodity. Fifty years ago, an attempt to put a price on Time would have landed a man either in jail on a swindling charge, or with a P. T. Barnum side-show, selling gullible patrons a look at the invisible fish. Today, well-paid radio salesmen start their rounds each morning with nothing more tangible to sell than Time—a twentieth-century product that costs real money. It is sold by the hour, the half-hour and the quarter-hour. Fifteen minutes on a national network costs about $2,700 exclusive of talent and production costs. So valuable has become the opportunity of reaching the buying multitudes, that advertisers pay well for Time, even in lots of 30-second spot announcements. With the price of this precious commodity rising daily, it is appalling how much of it we waste.

Our present system of reckoning Time as regards days, weeks and months, costs the City of New York approximately $5,322,886.25 per annum. To put it another way, the Gregorian calendar (the one we use now) is devouring the taxpayer's dollar at the rate of $607 per hour. Compared with Mr. Morgenthau's Stabilization Fund, this year's Naval Appropriation or the WPA's current running expenses, the sum is relatively insignificant. On a national basis, however, the figure begins to arrest attention and on an international scale the cost of our unsystematized method of measuring time is downright staggering.

By way of illustrating how we arrived at the foregoing figures, here is a straightforward simple question. What day falls on the 18th of next month? How long has it taken you to arrive at the correct answer? Unless you have a calendar within reach or your wife's birthday happens to fall on that date, I defy you to give an immediate answer. Instead you say: "This being the 12th, let me see, 30 days has September, April, June, etc. That gives us 31 days—humm—this is Sunday—next Sunday would be the 19th—the following Sunday the 26th—humm—the first falls on Tuesday—8th—15th—hum-m-m—22d—minus four—Oh yes, the 18th would be a—Friday." In terms of radio copy the above lines would consume 30 seconds of air time.

Assuming these calculations would take the average person one minute, counting mistakes and repeats—and assuming that half of New York's population is faced with at least one such absorbing little exercise every day, 58,333 hours are spent daily, solving the enigma of dates and days, and vice versa. Equivalent to 7,291 working days, this would provide

a man with a full-time job for 26 years. On the basis of the 25 cents an hour wage minimum, this man would be paid $14,583.25 for his effort. But that represents only one day's cerebration. The annual bill would be well over five million dollars.

Here is a typical piece of news writing. "On Friday, the sixth of April, 1917, the United States officially declared war on Germany." The dramatic impact of a simple sentence such as this is due to its placement in time, yet it took me exactly 15 minutes to find out on what day April the sixth, 1917, happened to fall. Had I not misplaced my *World Almanac* it would have taken only five minutes. In attempting to find out what day we celebrate the Fourth of July, Thanksgiving or Christmas, we are utterly dependent upon a calendar. Why should not the days and dates be as closely associated as hours and minutes?

After spending hours of questionable value pondering this question, there appeared in my mail one day not long ago, a press release from The World Calendar Association. Knowing nothing of the organization or its purpose in life, the pamphlet would probably have wound up in the waste basket except for the fact that the word "calendar" caught the eye of this time-conscious radio man. Not only did I learn that a practical solution to this agonizing problem has been found, but that under the leadership of one of the most charming women I ever met, Calendar Reform is being aggressively advanced. For, taking the initiative, I paid The World Calendar Association a visit, and met the lady in question, Miss Elisabeth Achelis. Miss Achelis then proceeded to disclose her far-reaching plan for revising our dates and days. While the formulae of most perfectionists are simple in theory, they have a way of imposing severe discipline on mind and body. The World Calendar, however, as proposed by Miss Achelis, proves to be as simple in fact as it is in theory. So simple that even those of us who don't take kindly to mathematics will have no difficulty carrying a perfect mental picture of the 365 days with their corresponding dates around in our heads, ready for instant use.

When any two nations agree on any one thing, it's news. Miss Achelis proudly announces that 14 countries have agreed to adopt The World Calendar. Business men have admitted it will simplify fiscal records. Churches, the guardians of religious feast-days, have approved the plan. Transportation companies eagerly await its adoption, for it will greatly simplify bookings. But what is this practical panacea? How does it work?

To begin with, the days of the year will fall on the same dates every year, i.e., January 16th will always be on Monday. The Fourth of July will inevitably be a Wednesday. Washington's birthday will be moved back to where it was before the institution of our present calendar, which would be the 11th of February, or Saturday. With Lincoln's birthday coming as it does on Sunday the 12th, and celebrated on Monday, this

arrangement would give us a long week-end instead of splitting up two business weeks. Christmas will fall conveniently on Monday every year, allowing a week-end for tree-trimming.

The miracle has been worked out so that each year consists of 12 months containing four evenly divided quarters. Every month has 26 working days. The first month in each quarter has 31 days and the two following months 30 days each. As a further aid to memory, each quarter-year begins invariably on a Sunday. "But," you say, "that takes care of only 364 days!" So it does. The 365th is added at the end of the year. Placed 'twixt Saturday, December 30th, and Sunday, January 1st, this odd day will be called Year-End Day—an extra holiday to be celebrated accordingly. Likewise, a Leap-Year Day will be inserted between the half-way marks, June 30th and July 1st, every four years—another holiday which will make a long summer week-end. That the new calendar will be a boon to business is self-evident.

Radio, for instance, is built around the quarter-year. All programs are based upon 13, 26, 39 or 52-week contracts. Equal quarters would be a great convenience. A program which started on a Tuesday would end on a Monday and weekly billings could be handled accordingly. Then too, there is the question of whether the date or the day is more important from a program standpoint. Each plays a vital role in determining the character of the program material, as do the time of day and the length of program. A weekday program and a week-end program are comprised of different elements.

Most effective, however, will be The World Calendar's aid in determining listener habits, seasonal trends and sales results. The only possible method of obtaining information on these three basic factors is by comparison. By comparing this week with its corresponding week last month, six months ago or last year, it is possible to approximate sales increase or decrease, anticipate seasonal trend, and observe the ever-changing habits of John Q. Public. In like manner, the comparison of months serves as a guide where capital expenditure is contemplated. In the past, such comparisons have only approximated accuracy for never are there two corresponding weeks which are identical. A department store, for instance, cannot compare its April 1st receipts this year with the same day last year, for April 1st fell on a Saturday, whereas last year it was Friday. By attempting the comparison on March 31st, one day's receipts are being lost which might make a difference of more than 1 per cent. Nor is it possible to acquire any degree of accuracy by comparing a five-week month with a four-weeker. Of all modern business, radio is more dependent on this form of speculation. The World Calendar would do much to stabilize dates and days and thereby reduce a percentage of financial inaccuracy.

In addition to its purely commercial possibilities, The World Calendar I think is broadly significant. In spite of existing political breaches between nations, we are being forced to view the world as a whole. Science, as the involuntary instrument of Nature, is gradually bringing about some form of world economy. The locomotive and the automobile, a generation past, shattered trade barriers between the states forcing a closer unity between 48 separate sovereignties. Today the airplane and radio ignore national boundary lines. With Europe less than a 58th part of a second away by radio and 24 hours by airplane, the responsibility of one nation toward another is increased.

Thanks to science and modern invention, greater progress along the road to social evolution has been made during the last 50 years than in any previous period in history. Utopia is still a long way off, but every sign is encouraging. As recently as 1884 the world got together and decided that all clocks should tick in unison. With 14 nations of the world already behind a unified calendar, we look forward eagerly to another evolutionary milestone—the early adoption of the new World Calendar.

FIVE POINTS CONSIDERED

A study of calendar reform, published by the Department of Research and Education, Federal Council of the Churches of Christ in America, April 22, 1939.

UNDERSTANDING of what is meant by calendar reform is facilitated by considering five questions: (1) How did we get our calendar? (2) What are its imperfections? (3) What should be the calendar of the future? (4) What is the movement in favor of this World Calendar? (5) What cultural and spiritual considerations arise out of the discussion of calendar reform?

The measurement of time by counting days is the most ancient of sciences. The calendar thus antedates the alphabet. In the original and local calendars throughout the world, days were counted according to phases of the moon, that is, by months, a circumstance to which there are many allusions in the Bible (e.g. II Kings IV. 23, Col. II. 16). The calendar was lunar.

Experience of the seasons suggested that a longer period than a lunar month is necessary to the measurement of time, and a year, inclusive of the seasons, was adopted. The year consisted of 12 lunar months, and as each of these months, calculated according to the moon, consisted of 29½ days, approximately, the lunar year contained 354 days.

The cycle of the seasons covers a period of 365¼ days which is 11¼ days longer than the lunar year, and this lunar year, therefore, was continually out of time with spring, summer, autumn and winter. For thousands of years, there have been endeavors to adjust this discrepancy but the ingenuities of Babylon, India and China have failed to achieve the impossible. To this day, arithmetical confusion over the lunar year complicates the Hebrew and Moslem calendars. Out of the Hebrew calendar, the lunar tradition emerged into the calendar of the Christian Church where it is apparent in the variable date of Easter and other movable feasts.

In the fifth millennium before Christ and probably earlier, the Egyptians emancipated their minds from the spell of the moon and discovered that the year of the seasons depended on the sun. They adopted the solar year, thereby displaying a wisdom which, curiously, was also attained

EDITOR'S NOTE.—Resolution adopted by the Universal Christian Council at Chamby, Switzerland, in 1936, is as follows: "*Whereas* the Universal Christian Council at its Eisenach meeting in 1929 expressed its desire for a careful study of calendar reform and Easter stabilization; and *Whereas* the Council in 1932 instituted an intensive study of these subjects by its research department; and *Whereas* these studies and reports from the churches have shown that a reform of the calendar and the stabilization of Easter would, if carried through, receive the support of the overwhelming majority of the churches, providing it is based upon the perpetual 12-month equal-quarter plan proposed by the League of Nations: Therefore be it *Resolved* that the Universal Christian Council instructs its Standing Committee on Calendar Reform to notify the Secretary General of the League of Nations concerning the above report and to secure the most effective presentation of this action of the churches at the forthcoming world conference on calendar reform and the stabilization of Easter and finally that this Council ask the churches to inform their respective governments of this action and of their views with regard to the desirability of adopting the new calendar."

by the Mexicans when, at a later date, they carved their calendar stones. In the year B. C. 45, Julius Caesar, on behalf of the Roman Empire, adopted the solar year of the Egyptians, with an extra day in February every leap year. The traditional twelve months were rearranged within this solar year, and the resultant calendar, adjusted in detail by Augustus Caesar, is known today as the Julian calendar.

There was, however, a slight discrepancy between the lengths of the Julian and the solar year, and, in the sixteenth century, the vernal equinox had advanced from March 21 to March 11 and was still advancing. Pope Gregory XIII, therefore, ordained that, in 1582, October 5 should be called October 15. In order to forestall a similar discrepancy in the future, it was arranged that the extra day in leap year, February 29, should be cancelled in three out of every four endings of a century, that is, in 1700, 1800, 1900, 2100, 2200, 2300, 2500, etc.

The Julian calendar, known as the Old Style, continued in use for many years in certain Protestant countries and in countries where the prevailing church is Eastern Orthodox. But the Gregorian calendar, or New Style, is now in almost universal use for secular purposes and, in Christian countries, for most ecclesiastical occasions also.

The Gregorian calendar has one fundamental merit. It is accurately synchronized with the solar year. But the arrangement of days *within* the year is awkward and illogical. The year, the month and the week do not correspond with each other.

The twelve months with the number of their days are as follows:

January 31	April 30	July 31	October 31
February 28/29	May 31	August 31	November 30
March 31	June 30	September 30	December 31

The lengths of these months differ from correspondence with a lunar month of 29½ days and they have thus no astronomical significance. The names of the months are derived from Roman numerals (September, October, November and December) which have ceased to be accurate since the year begins in January and not, as in ancient Roman times, in March; or from Roman deities or abstractions (January, February, March, April, May and June) which are mere names to the modern ear; or from Roman Emperors (July and August) who died nineteen centuries ago. The arrangement of the months, however it came about, has thus no authority behind it that matters in any way to the world in which we live.

(1) The half-years are of unequal length—181 or 182 days and 184 days. (2) The quarters are of unequal length—90 or 91 days, 91 days, 92 days and 92 days. (3) The months are of unequal length and irregular sequence—seven months of 31 days, four months of 30 days and a month of 28 or 29 days. (4) The week of seven days does not fit into any month, any quarter, any half-year or any year. (5) The year consists of 52 weeks

and either one or two days, which means that a particular day, say January 1, occurs in successive years on successive days of the week—Sunday, Monday, etc., while, after leap year, there is a jump to the second succeeding day of the week, for example, from Sunday to Tuesday. Each year the Almanac, with its anniversaries and other items, has to be changed.

There is thus no uncertainty as to the problem to be solved. Civilization accepts the solar year of 365 days, with 366 days in leap year. The question is how to arrange the months and the weeks within this solar year. It is a question of simple arithmetic.

The number 365 equals five multiplied by 73. It is thus a difficult number to deal with. The number is not divisible by seven—the number of days in a week—or by 12—the number of months in a year. No calendar reform is worth discussing if we are to deal only with the number 365.

In Egypt, the problem was faced and solved. The normal year was divided into 12 months of 30 days, or 360 days in all, and five additional or sacred days outside the months. In the elaborate Mexican calendar, we observe something of the same arrangement. Calendar reformers of today prefer a simpler and more workable reconciliation of the solar year with arithmetical convenience. They allot 364 days to the months and weeks, and they reserve one day, or two days in leap year, as world holidays. The Year-End Day, as it is called, falls between December 31 and January 1. The Leap-Year Day falls between June 30 and July 1.

The number 364 is equal to 52 times seven. A year consisting of 364 days thus includes exactly 52 weeks of seven days. If, then, the year begins on a Sunday, the first day of the week, every succeeding year will begin on a Sunday. So with Saturday, the seventh day of the week. It will always be the seventh day of the year. Under this arrangement, therefore, the year becomes uniform, and the calendar, thus reformed, will be for all time to come a perpetual calendar.

The number 364 also equals 13 times 28. It was suggested by Auguste Comte, therefore, that there should be 13 months in the year, each consisting of 28 days or exactly four weeks. The 13-month calendar has been widely publicized but has failed to win the international favor without which no reform of the calendar is possible. It is opposed in Great Britain and in India. Mr. Gandhi holds that "as most of the Indian calendars are arranged on a 12-month basis, it would obviously be easier to meet on this common ground." In 1932 the Universal Christian Council for Life and Work instructed its Research Department to study calendar reform and there was submitted the conclusion that the 13-month calendar "would necessitate too great adjustments and would mean a break with time-honored customs." As a result "far greater opposition would be aroused." Apart from any other disadvantage, a 13-month calendar destroys the half-year and the quarter as periods within which to calcu-

late financial and commercial balance sheets, interest on loans and mortgages, payment of taxes, etc.

We proceed, then, to consider The World Calendar which offers today the one practical and practicable plan of perfecting our present traditional and anomalous method of measuring time. In The World Calendar —let us repeat—the divisible year consists of 364 days. The number of weeks is thus exactly 52, and the calendar, as we have seen, is perpetual. The World Calendar retains 12 months and thus offers a minimum of departure from associations with the past. But these months are arranged in four equal quarters, each of 91 days or 13 weeks, thus,

January 31	April 31	July 31	October 31
February 30	May 30	August 30	November 30
March 30	June 30	September 30	December 30

Not only is the year perpetual in its uniformity, but each half-year and each quarter is uniform with every other half-year and quarter, and always begins with a Sunday and ends on a Saturday. It is true that four months contain 31 days while eight months contain 30 days. But this difference of one day in 31 corrects an existing difference in the case of February of three days, and the longer and shorter months are arranged regularly by quarters instead of irregularly, as at present. Also, every month contains an equal number of working days—26. The additional day in the long months is always a Sunday, so that in these four months there are five Sundays.

It is sometimes supposed that calendar reform is an idea peculiar to this modern era and to our Western civilization. According to this theory, advocates of calendar reform are crusaders for one of many causes which, from time to time, awaken momentary enthusiasm. Any such appraisal of endeavors to perfect the calendar falls far short of the facts. Throughout the entire course of history, covering seventy centuries or more, there has been a world-wide development of calendars, and in this post-war period, calendar reformers are thus aligning themselves with an age-long tradition to which lawgivers like Moses the Hebrew, Solon the Greek, and Numa Pompilius the Roman, scientists like Omar Khayyam the Persian, Galileo the Italian and Isaac Newton the Englishman, with a company of scholars, statesmen and ecclesiastics whom no man can number, have contributed of their knowledge and wisdom.

Never has there been more evident activity in the field of calendar reform than there is today. Throughout Asia and Africa, the traditional calendars, based in whole or in part on lunar calculations, are found to be wholly inadequate to modern requirements. By official adoption or unofficial use, there is thus a world-wide acquiescence in the Gregorian calendar. Japan accepted this calendar in 1873, China in 1912, Bulgaria in 1916, Soviet Russia in 1918, Yugoslavia in 1919 and Roumania and Greece in 1923, and Turkey in 1927. For the large populations concerned, here was a break with the past far more drastic than any involved in a change from the Gregorian to The World Calendar—a change from Eastern to Western reckoning of time, from Old Style to New Style.

The Gregorian calendar with which we are familiar is no longer, therefore, the especial possession of the Western World. It belongs to mankind—Christian, Moslem, Hindu, Buddhist, Jewish and, be it added secularist. Insistent with the pursuit of happiness, mankind demands the best, whether in science, in scholarship, in the arts,

or in recreations, conveniences and commodities. With a second-best calendar, there is no reason why civilization should rest satisfied. The only calendar possible today is a calendar in use by the world as a whole, and such a calendar ought to be adjusted to the strict exactitudes of commerce, industry, the professions, the home, intercommunication, science, statistics, education and other complexities of a highly elaborate era.

In 1931 the League of Nations considered calendar reform, and so great was the interest in the subject that no fewer than 200 plans were submitted by about 40 countries and carefully examined. It is amid this multitude of suggestions that The World Calendar—sometimes called the Swiss Plan—has won its way to the forefront as the obvious and inevitable solution of a generally recognized problem. There is no longer any serious difference of opinion over what should be The World Calendar. The only question is when that calendar shall be brought into operation.

In past years the management of most calendars throughout the world has been an ecclesiastical responsibility. The calendar, like writing, was regarded as a mystical affair. That, as we have seen, is true of our present calendar which bore the name of Julius Caesar as Pontifex Maximus at Rome, and later of Pope Gregory XIII, who included Pontifex Maximus among his titles.

The World Calendar is not specifically ecclesiastical. It is a *civil* calendar, available and necessary for all purposes, helpful to all peoples. The final authority over any such public convenience must be the community. There is, however, a great opportunity for churches throughout the world to carry on the task of calendar reform, yet to be completed, and so to render service to mankind by furthering improvements which the civil authorities will endorse.

It would be well, obviously, if The World Calendar were to come into operation in all countries on the same date, and by international agreement. On the other hand, we must bear in mind that no calendar at any time has been thus immediately and universally accepted. Within the Roman Empire the Julian calendar had to make its way among the people. So with the Gregorian calendar. It was instituted in 1582 at the Vatican but the British Empire (then including the United States) only adopted it in 1752. Sweden was another instance of delayed acceptance.

An interesting precedent to The World Calendar is Standard Time. It is difficult in these days to realize that sixty years ago, clocks in railway stations in Paris were five minutes behind clocks outside, and time in London, England, differed by four minutes from time at Reading, 36 miles distant. Great Britain adopted what was called Greenwich Time in 1880, and time on the zone system is now almost universal.

The clock and the calendar are in daily and hourly use by countless millions. They serve many purposes, sacred and secular. Over the measurement of time, public opinion is thus highly and even emotionally sensitive. The delay on the part of certain countries in adopting Standard Time was due in some measure to the accidental circumstance that this time was calculated east and west of Greenwich Observatory in one particular country.

So with the still greater reluctance in some communities to substitute the Gregorian for the Julian calendar. The adherence to the Old Style was due to no criticism of the New Style, as such, but only to a certain powerful susceptibility, namely, a dislike of ecclesiastical authority at the Vatican, even when, on the merits, that authority was wisely exercised.

In dealing with The World Calendar, we need to be on our guard against similar ideological irrelevances. The calendar, like the multiplication table, is the same for everybody, whatever be his race or religion. If, for instance, Turkey were to change from the Gregorian to The World Calendar, it would not mean that the latter is Islamic or anti-Christian or anti-Jewish. It would mean that Turkey had been convinced by arguments which are equally valid for society as a whole.

Majorities raise no objection to the principles of The World Calendar. Replying to an enquiry of the League of Nations, the Holy See stated on March 7, 1924, that "from the point of view of dogma, the reform of the calendar would meet with no difficulties," a pronouncement that sufficiently indicates the fundamental position of the Roman Catholic Church. A more positive attitude has been adopted by the Eastern Orthodox and Protestant Episcopal Churches. For instance, Bishops Manning and Stires ardently approve The World Calendar. The sentiment of other Evangelical Churches is expressed by numerous resolutions and by the view of a representative spokesman like the late Dr. S. Parkes Cadman, also an ardent calendar reformer.

To all change, there is a resistant inertia that has to be overcome by patient effort. But definite objection to The World Calendar is now limited to a well-defined minority which has still to be convinced over one detail of the reform—the intercalary day after December 30 and the second intercalary day in leap year after June 30. The suggestion is that these days break the continuity of the seven-day week, so offending against the sacredness of the Sabbath.

The difficulty—and in every reform, there is bound to be some difficulty—has been respectfully considered by the friends of The World Calendar, and the following comments may be suggested:

(1) The difficulty is not held to be important by any of the more numerous religious communities, Christian, Moslem, Hindu, Confucian, Shintoist, etc. It is emphasized by Seventh Day Adventists and Orthodox Jews. The number of Adventists in the United States is entered in the *World Almanac* as 140,428 in 1926. The number of Jews in the world is approximately 15,000,000, of whom many liberals favor The World Calendar. The New York *Times*, like the London *Times*, supports the reform. The minority is thus less than one in 200 of mankind.

(2) The minority is almost if not entirely non-existent in many densely populated regions of the world where the people have the same right as others to the most convenient and accurate measurement of time. In India, there are several religious minorities, more numerous than these under discussion. Yet few Americans or Europeans would admit that a minority in India should exercise veto over the calendar held to be suitable in other continents.

(3) The objections of the minorities are definitely ecclesiastical. But nothing in The World Calendar requires a community to apply it to ecclesiastical purposes, a decision that lies wholly within the discretion of the community itself, and every minority, the wide world over, is left, therefore, at liberty to observe any kind of ecclesiastical occasion according to any kind of ecclesiastical tradition. Conversely, it is not easy to make good a claim by one person to prevent 199 other people obtaining a civil and, incidentally a religious advantage also, because he, as an individual, fears a religious inconvenience, peculiar to his own group, and disputable on the facts of the case.

(4) The objection is based on an erroneous idea of what is meant by a seven-day week. A traveller who circumnavigates the world westwards lives through six days in seven. One who goes 'round the world eastwards, lives through eight days in seven. The length of a day thus depends on which way we happen to be moving over the surface of this planet, and the day is only 24 hours long when we remain exactly in the same place.

(5) The day, as we habitually use the term, is not, as so many controversialists

assume, the Biblical day. It begins and ends at midnight, whereas the Biblical day, including the Sabbath, begins and ends at sunset. Our day is a standard day of definite length, measurable by the clock, whereas the Biblical day, on which is based the Sabbatical sequence, varies in length according to the seasons.

(6) The Christian Church, guided by Jewish apostles, inherited the Hebrew Sabbath celebrated on the seventh day of the week, but did not hesitate to change the day of rest and religious observance to the first day of the week in commemoration of the Resurrection, thereby breaking the seven-day sequence. The Moslem Sabbath begins on Thursday evening—one day earlier than the Jewish and two days earlier than the Christian.

(7) In The World Calendar, every week in the year has seven days, including all the Sabbaths observed, whether by Jews, Christians or Moslems. The seventh day honored by Jews would be for the first time, the seventh day of every quarter of every year and therfore, more securely guaranteed by the calendar than ever before.

(8) The intercalary days do not interfere with any Sabbath. On the contrary, they add to the value of Saturday and Sunday as rest days by securing a long week-end—that is, a holiday before Sunday.

(9) Scholarship suggests that the seven-day sequence succeeded an earlier and irregular division of the month according to phases of the moon and was emphasized during the Babylonian Era of Jewish history. In any event, ceremonial insistence on the Sabbath was denounced by Isaiah (I. 13), Hosea (II. 11), Jesus (Mark II. 27) and Paul (Col. II. 16).

(10) In the struggle to uphold spiritual and cultural values in a world apt to be dominated by the material, it is doubtful wisdom to take issue with mankind, over any principle unless it be fundamental to life, here and hereafter.

The case for an early adoption of The World Calendar has been summarized by Miss Elisabeth Achelis, president of The World Calendar Association, in the following terms:

"It has been said that other vital needs exist more important than that of an ordered, stable and harmonious calendar. But I ask you: How can we obtain improvements if we do not even improve our time-system which influences every phase of our life? How absurd to think that our 2000-year-old calendar is adequate for our day and age! We gave up candlelight when electricity was offered; we gave up sailing vessels, clippers and buggies when super-steamers, streamlined trains, automobiles and airplanes came into use. Let us give up our obsolete calendar and adopt the best we know, The World Calendar, for the recording, measuring and use of our time."

This movement should be easily adopted by international agreement as it lies beyond the interests of any one nation or race. It does not call for concessions by any one group at the expense of any other. This is because time, being universal, belongs to all alike. Here at least, in these troubled times, is a safe equable movement in which every nation can unite. International agreement on a revised calendar would prove even to the doubters that nations *can* agree and cooperate. And who knows but what the nations themselves, when they find they can agree on this, may not see the feasibility and wisdom in agreeing on other measures as well. If we all do our part we may find that a new World Calendar is a definite step toward world-wide harmony and understanding.

(Inscribed to Elisabeth Achelis)

SWING SONG OF THE SPHERES

By Angela Morgan

(A Plea for Calendar Reform)

'Mid all the universe of suns,
The company of chiming spheres,
Our human calculation runs
Against the grandeur of the years,
Keeping a course unkempt, unkind,
Which breaks the LAW OF COSMIC MIND.
While overhead, in true accord,
The chanting stars obey ONE LORD,
Flinging to us—if we but heard—
Their summons, their celestial word:

"Swing to the suns, tune to the gods!
Perfect your foolish timing-rods,
Your calendars, that but deny
The ordered splendor of the sky.
Forget your clumsy human pride—
With friendly neighbors keep in stride!"

In that great Orchestra of Space
'Tis we alone are out of tune!
We impudently dare to place
Our little, man-invented rune—
The discord of our calendars—
Against the glory of the stars,
While suns and planets in one song
Beseech the earth to right this wrong,
Imploring us—if we had ears—
To join the chorus of the spheres.

"Swing to the line! Keep to the course
Ordained by that Majestic Mind
Whose edict is Eternal Force
Within the pulsebeat of mankind.
Keep time with us and know rebirth,
Bring earth to heaven and heaven to earth!"

Angela Morgan

SURVEY OF REFORM RABBIS

By Rabbi Martin M. Weitz

Temple Beth Hillel, Kenosha, Wisconsin

IN ANCIENT days as well as in more modern times the interrogation was a technique for education. In Israel especially, *Sh'elot U'tshuvot*, "Questions and Answers," was an established medium of its world-wide communities, was the framework for the later fullness of the countless rabbinical commentaries to Torah and Talmud. It formed the world's first extension course and correspondence school, as it were, among the ancient and medieval academies of Israel, as far east as Baghdad and as far west as Cordoba. What the medieval city possessed—in its *Universitas*, adapted from the Library and Lecture Hall of Alexandria; in its Church, rock-ribbed citadel and steeple to make people look heavenward; and in its Guild-Hall, as fraternal workshop—medieval Israel had in its Synagogue, as house of aspiration (shrine), house of study (school), and house of assembly (social hall). As the Synagogue service became standardized, so too did courses of study, usually by means of "Sh'elot U'tshuvot" among the leading luminaries of the time.

"Questions and Answers" meant more than "what" and "when"; for they were also prefixed with "why" and "wherefore." They were links of life among scattered communities. They were threads that led not "to tie the air in knots"—to quote a phrase from Buddhism—but to form a tapestry, contentful in structure and colorful in workmanship. Rabbis of old, anticipating modern education, utilized the technique of getting students to *ask* questions rather than having them tell or retell answers. Even major festivals were thus dynamized into new interest for children: witness the "four questions" by and for youth on Passover and responses via facts, foods, and faith wherein all the five senses partake of the Seder-Supper-Service of Passover.

Since the first question for Passover is, "Wherein is this night different from all other nights?" it indeed suggests a similar one for our purpose of calendar change, "Wherein is *this* year—the proposed World Calendar—different from all other years?"

Sheloth U'tshuvot meant voluminous correspondence long ago, epistles that were books. In the modern world that often has more questions than answers, answers to questions as well as questions to answers might best be obtained through a simple questionnaire. To utilize simplicity and yet to encourage the spirit of "questions and answers," we formulated "four questions" not for the "day" but for the "year," so correspondents would respond with answers or questions.

For several years the author has been interested in calendar reform.

In the course of those years and in response to some descriptive deductions favorable to calendar change, some colleagues have discouraged such interest on his part while others have warmly approved. Some there were who insisted that it would make for even greater disunity among the already widely segmented groups in Israel, that its values were chiefly statistical and commercial, and would create far more problems than it would settle, that bureaus were already established against any reform which would shift the present seven-day sequence, which would alter the Sabbath by even a single change in the year.

To better understand the basis for acceptance or rejection of calendar change on the part of Liberal Rabbis, to know to what extent calendar reform has had a hearing, if any, among Reform Rabbis, to discover to what extent the views of the writer, as expressed in writings sent them, are endorsed by colleagues, and to appraise individual reactions to the proposed World Calendar, as well as to have and share the benefits of observations of contributions by colleagues who are interested in the study of calendation in general and proposed modifications in particular, the writer prepared "four questions" in the spirit of *Sh'elot U'tshuvot* and together with sufficient data on The World Calendar had it all forwarded to a cross-section of the Reform Rabbinate of America, during "counting of the days of the Omer" (from Passover and to Pentecost of last year).

According to the *Yearbook* (1938) of the Central Conference of American Rabbis, there are about 430 Liberal Rabbis in America, Canada, South Africa, Great Britain. Of these, approximately 150 are not in the active ministry in America but serve as professors in rabbinical training schools, are in other occupations or are retired, or are active overseas. To obtain a representative cross-section of Liberal Rabbis in America, with continental American coverage, with wide range of age distribution and adequate exposure to small city as well as metropolitan center, the questionnaire and materials were sent to practically two-thirds of the Reform Rabbinate in the United States, a total of 290. To permit of a free and unbiased judgment, to serve as point of reference and departure, to encourage a solid and not too long-delayed response, adequate explanatory materials previously published, and pre-stamped, pre-addressed envelopes accompanied the questionnaire.

What then was the questionnaire itself, and what were its dominant disclosures? Thus may we formulate an *unofficial,* partial—yet impartial —reply to the inquiry: Does the Reform Rabbinate say "Yes" or "No" to calendar reform? The letter and its "four questions":

Dear Rabbi.....:

The World Calendar Association—a non-profit-making society interested in calendar education and research—sponsors the well-known World Calendar in order to put more balance into the present calendar and to free it from the decided disadvantages

which it now bears, as explained in the brief enclosure. The Association has asked my consent to send you copies of two articles published recently in the *Journal of Calendar Reform.*

They likewise asked other questions as to the attitude of American rabbis on calendar revision. These queries—suggested below—cannot be answered adequately, without some response from a number of individual rabbis. Would you care to extend your cooperation and advice so that a reasonable reply might be formulated from your own remarks, as well as others singled out for this questionnaire?

Broadly restated, the questions are:

1. Would Liberal Rabbis favor a World Calendar that stresses a five-day work-week?
2. Would they favor a World Calendar that insures simplicity and other obvious advantages over the present calendar?
3. Would they agree or differ with general conclusions—as expressed in enclosed articles—regarding social interpretation of various American festivals, and the deduction that changes have been permissible, and might be today, in the Jewish calendar?
4. Would they be for or against a revised calendar, if it affects the seven-day sequence?

1. Speaking for yourself, would you
 FAVOR such week?.....
 OPPOSE such week?.....
2. Would you
 FAVOR change?.....
 OPPOSE change?
3. Would you
 AGREE with conclusions?.....
 DIFFER?
4. Would you
 FAVOR improved calendar without such sequence?.....
 FAVOR present maladjusted calendar, but *with* sequence?...

The only way for The World Calendar to find out whether or not Liberal Rabbis *as individuals* share their opinion was for them to make inquiry of a number of them, as yourself—via reactions to the enclosed material. This, then, is the background of the above "four questions."

Your reply—whether favorable or unfavorable—will be most helpful for my framing a fairly representative cross-section of liberal rabbinical opinion on the subject of calendar reform. (Please write all comments on reverse side and enclose in available self-addressed envelope. Thank you.) With best wishes for a happy SHABUOTH and a pleasant summer, I am,

Cordially,
Martin M. Weitz.

On the reverse side the "four questions" were repeated to permit of any commentaries that individual rabbis cared to append.

Not all of the recipients of the questionnaire responded. Whether this was due to indifference to the subject in its entirety, to preoccupation with forthcoming festivals, to haste in preparation for summer conferences or vacations or both, or to pressure of activities in behalf of what were considered far more vital problems for Israel, we do not know. The quantity and quality of the replies, however, are encouraging for calendar studies, if not for endorsement of calendar revision. A sufficient number of answers came in to permit of a decent appraisal. Since two-thirds of the rabbinate were sampled for the questionnaire and since well over one-third responded, we might indeed feel that the questionnaire accomplished all that it aimed for—to secure a cross-section of opinion from Reform Rabbis on the subject of calendar reform, as of May, June, July, 1938.

This conclusion is implemented by the following facts: 290 Liberal Rabbis were selected at random from the total of 430 to receive the litera-

ture on calendation. Of these 110 replied to one or more of the questions, while 67 of the 110 carried commentaries on the reverse of the letterhead, in addition to specific reactions or preferences to above-cited "four questions" and, more singular, 12 volunteered letters instead of "questionnaires" to register protest, endorsement, explanation or interpretation.

In this survey we shall *not* list how each rabbi has answered each question. We shall, however, cite individual comments where interest and interpretation for or against, merit it, after we have presented basic data.

"Question One" (Five-Day Work-Week) had a total of 48 favorable replies of which all but 14 endorsed it without reservation or explanation. Seven demurred with a "no," of which two were implemented by explanations on the reverse side.

The second question, "Would you favor calendar change?" found a total of 45 rabbis who go on record for modification and of these eight enlarged upon their choice with comments. Seven vetoed revision, with no explanatory remarks. A number were uncertain and since they posed a "?" and not "yes" or "no" or explanation, we omit them here.

"Would you agree with conclusions in articles?" was the third of the interrogations. This assumed at least a cursory perusal if not study of the materials enclosed with the questionnaire and unlike preceding replies necessitated hours rather than minutes for a response. In spite of this handicap, a total of 50 colleagues essayed replies. Thirty-two concurred with surveys, analyses, and conclusions as set forth in behalf of a calendar change, and nine disagreed in part or in whole, while nine voiced uncertainty, for lack of time or interest. For this vital inquiry 13 ventured individual reactions in addition to a "yes" or "no."

And the crux of the problem for Israel was the "fourth question," that of sequence as phrased in "Would you favor a World Calendar even with loss of seven-day sequence?" Here greatest opposition was anticipated on the part of most of the correspondents, yet results did not wholly validate such assumption. A total of 25 Reform Rabbis, in this sample questionnaire which elicited 110 responses, endorsed calendar reform without reservation even if it affected the seven-day sequence, while a total of 27 voiced strong opposition. Only three were hesitant for a commitment on the threshold of this difficulty. It is interesting to note that on this query more commentaries—a total of 28—and more lengthy ones were volunteered than for any two of the preceding questions.

From above summary it is evident that not all of 110 replies answered all "four questions," that not all enlarged views with comments for all inquiries, that all but the last question evoked heavy margins favorable to calendar change in general, whereas the last question encountered an almost even division of opinion, buttressed by and balanced with a much larger volume of commentary.

In a number of instances, letters have been received in lieu of the questionnaire. Let us here consider several statements that bespeak a general outlook more than specific details, that express stronger views on one or more phases of calendation than do most of the questionnaires with their limited sentence or paragraph commentaries. Several communications refer to action on calendar revision contemplated before the Central Conference of American Rabbis at the 39th Annual Conference held at Detroit, Michigan, June, 1929, and incorporated in *Yearbook,* Volume 39, pages 62-67, and 111. Rabbi Zepin, Secretary for the Union of American Hebrew Congregations, states in his reply that "The Union put itself on record as against the new calendar system because it would change the dates of the Jewish holidays" (he refers to the 13-month calendar), while Rabbi Marcuson, Recording Secretary of the Central Conference of American Rabbis, in his correspondence specifies that "this matter was brought before the Central Conference of American Rabbis in 1929 and after a full discussion a resolution was introduced and unanimously adopted opposing any calendar reform which would mean the shifting of the Sabbath." Dr. Freehof of Pittsburgh intimates in a letter, "I was opposed (in 1929) to the Cotsworth 13-month calendar and I am opposed to The World Calendar for the same reason, namely, in behalf of Orthodox Jews because of the breaking of the seven-day sequence. . . ."

Let us then consult the *Yearbook* under question, for it is crucial to our survey. But let us do so with due regard to the fact that the calendar under consideration 10 years ago was the 13-month Cotsworth (or Eastman) calendar and not the 12-month World Calendar, before we venture a persual of illustrative commentaries for each of the "four questions."

In 1929 a resolution was offered consisting of four paragraphs, of which the following—the last—is the most significant, as found in the *Yearbook,* Volume 39, page 63:

> "A reform of the calendar which would cause the Jewish Sabbath, now identified with Saturday, to occur on a different day of the week in successive years, would create for Jewry a religious and socio-economic problem of such insuperable difficulties as in effect to condemn the historic Sabbath to destruction. Therefore the Jews of the United States comprised in their representative organization, the Synagog Council of America, are unitedly opposed to the local or international adoption of any system of reform of the calendar which would alter or interfere with the regular periodicity of the seven-day week through the insertion of a blank day in the year. Only such correction or reform of the calendar is acceptable to the Jews of the United States as would not disturb the recurrence of the seventh day Sabbath on that astronomical day which from time immemorial has been recognized and sanctified as the seventh day of the week."

On page 64 it is mentioned that this report, which dealt with two other matters as well as calendar revision, was submitted by Rabbi Solomon Foster, "was received and ordered printed in the *Yearbook,*" and when a request was tendered for Conference membership in the League to Safeguard the Fixity of the Sabbath, it was referred to the Committee

on Resolutions which reported back June 29th, with the following statement, as published on page 111 of the same *Yearbook:*

> The question of the advisability of the Central Conference of American Rabbis joining the League for Safeguarding the Fixity of the Sabbath having been referred to the Committee on Resolutions, the Committee reports the following Resolution:
>
> Whereas, the religious convictions and observances both of Christians and of Jews require a fixed Sabbath; and
>
> Whereas, the conveniences sought through the reform of the calendar may be had without destroying the regularly recurrent seven-day week; and
>
> Whereas, the League for Safeguarding the Fixity of the Sabbath has been organized with the objective of preserving the Sabbath; therefore,
>
> Be it resolved, that the Central Conference of American Rabbis ratify the action of the Executive Board in joining the League for Safeguarding the Fixity of the Sabbath and that it authorize the continuation of our membership therein for so long as, in the discretion of the Executive Board, it may be wise and necessary.

The last two sentences seemed indeed, a decade ago, to impose "final sentence" on the question of calendar reform, at least for that time, with these words: "Your Committee recommends the adoption of this resolution. The recommendation of the Committee was adopted." If we study the discussion on pages 64-67, we learn that even in 1929 a number of rabbis held sentiments in favor of some calendar reform, strongly akin to written opinions penned on the back of returned questionnaire in 1938. Long before the advent of The World Calendar, a number of rabbis entertained views not at all antagonistic to revision. A typical attitude prevalent then perhaps was that voiced by Dr. Ephraim Frisch, San Antonio:

> I rise to discuss the paragraph which has to do with the calendar changes. I am not an authority on the calendar, and have not studied the question of the effects the proposed changes in the calendar will have on the Sabbath. I am speaking with the greatest sympathy for our Orthodox brethren. I think there is entirely too much magnification of the importance of this issue. I think it misrepresents us to the world. If the world is going to be benefited by the change of the calendar as proposed, then we Jewish people of the Reform wing at least ought not to stand in the way.
>
> I am speaking with due reverence as to what a divinely ordained Sabbath means to me; it means that the human mind and human society thought out under Divine inspiration, a day of rest. The mathematics and the calendar of it does not mean so much to me, and I do not think they mean much to my colleagues. As to the wanderingness of the Sabbath, it may have wandered before, for all I know; I think it did in the process of calendar changes. We are interested in a great institution and idea, and not in its geography or in its time location; and I do not think we would suffer any serious consequences if once a year the Sabbath was an Elijah—a wanderer.

This view of Dr. Frisch's is all the more significant in that it is one of but four comments recorded for "discussion" on the "resolution" for or against reform.

After perusal of above discussion we observe that 10 years ago the major objections to revision were that Jewish festivals would "wander" annually in a 13-month calendar, that the seven-day sequence of the Sabbath would be seriously disrupted, and that this Sabbath displacement, whether with a 13-month Cotsworth or Eastman calendar, or a 12-month

World Calendar, would lead to loss of Sabbath as a religious institution for Israel and to greater disunity in the already divided house of Israel.

On the other hand, it must be observed, calendar revision has greater acceptance and more appeal in the Liberal Rabbinate today than it did a decade ago, and this acceptance apparently endorses the comments made by Dr. Frisch in 1929, judging by our unofficial survey of individual rabbis throughout the country who penned their opinions privately. By the survey's conclusion that "question four" met with almost even response, it appears that The World Calendar now meets with much less opposition than did the 13-month calendar then.

After these introductory remarks on the status of calendar revision among Liberal Rabbis ten years ago, let us proceed directly to a consideration of a cross-section of comments for each of the "four questions" as indicative unofficially of the current of opinion today.

Question One: "Would you as Liberal Rabbi favor a World Calendar that stresses a five-day work-week?"

Practically all commentaries for this question express favor for a five-day work-week, though some see no organic relationship between that and calendar revision, for as Dr. Julian Morgenstern (Cincinnati) clarifies, "Our present calendar offers that possibility as well as the proposed calendar," and as Rabbi Bamberger (Albany) agrees, "I'm in favor of a five-day week, but see no connection between that and the question of calendar revision." Rabbi Abraham Shusterman (Tulsa) avers, "I favor a five-day work-week. I favor it for its humanitarian note and as a Jew I consider it a step forward to the revitalization of the historic Sabbath."

In other replies, the five-day work-week is endorsed on its own merits, with no reference to The World Calendar at all. This is evident from the statements by Dr. David Philipson (Cincinnati), "I favor the five-day work-week for two reasons: First, it might aid business recovery and secondly, it would do away with the contradiction in the present attitude toward the traditional Jewish Sabbath. With a five-day week the second day Sabbath could be observed as a day of rest and worship." Dr. Rudolph Coffee (San Francisco), "I certainly favor this reform, which gives men time to education, less to labor"; Dr. Jacob H. Kaplan (Miami) admits that, "I was in favor of this nearly 20 years ago when on a different question, the Sabbath question, a five-day work-week was necessary"; while Rabbi Eugene Hibschman (Altoona) would set the following limitation on such a week: "Only on condition that the work-week be no longer than 40 hours, and preferably less; and that the two-day holiday be open, allowing amusements and recreation of all kinds"; Rabbi Norman Diamond (New Castle, Pa.) believes it "socially and economically desirable. Would simplify problem of attendance at services"; while Rabbi David

Alpert (Tyler, Tex.) concludes, "Upon reading your arguments, I have no strong objection but I still fail to see any of the proposed advantages."

Question Two: "Would you favor a World Calendar that insures simplicity and other advantages over the present calendar?"

It is under this question that calendar change is accepted in principle by a number of colleagues, though not always in endorsement of The World Calendar, as currently constructed.

Those who are definitely opposed to change at this time and who do not believe that advantages claimed for a reformed calendar would be significant improvements, include Rabbi David Zielonka (Tampa), who insists that "the so-called confusion of our present calendar is purely hypothetical. I cannot see where the proposed change would solve any present difficulties," and Dr. Julian Morgenstern (Cincinnati), who observed, "I find no urgent need nor adequate justification for any revision."

Others who do not share opposition to change in principle indicated in above two opinions, yet who do not care to accept certain current solutions of calendar revision, might be described either as totally unconcerned, partially indifferent or hesitatingly uncertain. Descriptive of such attitudes would be these expressions: Dr. Bernard Bamberger (Albany), "I don't see the importance and advantages of the revised calendar as great enough to make much difference. My own conscience would not be affected by the change." Rabbi Halevi Baron (now in Glasgow, Scotland), "Perhaps the 13-month calendar is as good or better; I don't know." Dr. G. George Fox (Chicago), "I have no particular interest in the matter, yet see no objection to a universal calendar."

We have noted previously that 45 approved of change in the calendar in general, though perhaps not of single systems devised to date. Their perspective might be derived from the observation by Dr. David Philipson, that "the prime objection to reform of the calendar is the standing still of orthodoxy which opposes any change. Reform Judaism is on record as having abolished the second day holidays thus reforming the traditional Jewish calendar in this particular. There is no reason why Liberal Rabbis should not favor a further reform if it seemeth good and advisable; and it seemeth thus to me." This is seconded by Dr. Rudolph Coffee who believes "the calendar should be revised and simplified."

Rabbi Albert Shulman (South Bend) implies that "because Liberal Judaism has departed from the observance of the Orthodox calendar and because Orthodox Jewry finds it difficult to follow the calendar without the aid of the English calendar, a revision would be to the advantage of both, since Jewish holidays would be fixed with more degree of regularity." Rabbi Harry Pastor (Peoria) adds an original note with, "I would like to see a great deal of thought given the idea of having American holidays

arranged to come out on a Monday, for a complete week-end vacation," while perhaps the general feeling on calendar revision, for this group, is characterized by Rabbi Max Raisin (Paterson) who endorses it, with a reservation, "But for this question (seven-day sequence), there should be no objection to the ideas of calendar reform as such."

Question Three: "Would you agree or differ with conclusions as expressed in the articles . . . (1) American festivals should be socially reinterpreted, (2) Jewish festivals have been changed in the past and therefore may be modified in the present or future?"

Correspondents here too fell into several categories. In general, those who were favorable to "question two" endorsed the conclusions for "three," while those unresponsive to "two" were less indisposed to this inquiry.

A total of three disagreed with major contentions, such as Rabbi Diamond's fear that "too much universalization may tend to absorb that which is peculiarly Jewish." Indecision or uncertainty was noticed in such remarks as, "Would want to consider specific application or applications" by Dr. Samuel Koch (Seattle), or "Do not yet wish to express an opinion" by Rabbi Philip Jaffa (Phoenix), or "Perhaps later on I may have a chance to study this question" by Rabbi Morris Clark (Pine Bluff). General endorsement and agreement in whole or in part was expressed in more than half of the commentaries and correspondence. This is characterized by Dr. Coffee's statement, "Without agreeing specifically with all your suggestions, I can see fine spiritual gains in modern social applications to holidays," and too by his original thought, "Why not have ten days of spirituality, February 12th-22nd, Lincoln to Washington?" A simple type of response is Rabbi Kaplan's phrase, "Very interesting!" Others seem to share the views of Rabbi Shulman when he avers, "Anything that makes for progess and better understanding for the general welfare should be given a fair trial," and of Rabbi Harold I. Saperstein (Lynbrook, N. Y.) when he concludes, "While I do not agree with certain details of scholarly interpretation, I feel in agreement with the articles, that the important thing about Jewish festivals is their message—and that any calendar system which will help make that message more effective is to be desired." Dr. Henry Englander (Cincinnati), though hesitant of endorsement of seven-day sequence, comments in a general way, as far as the published articles are concerned, "the arguments presented are logical."

Question Four: "Would you favor or oppose an improved calendar without seven-day sequence?"

This, in our survey, is the major problem and the prime inquiry, for here we encounter a slightly more than even "ballot" *(unofficially)* and here comments are provocative as well as productive. Citations reveal

opposition, strong opposition, affirmation as well as mild indifference.

Opposition to the loss of seven-day sequence is indeed vocal and vital: Rabbi Holzberg (Trenton) tersely says, "I am opposed to any calendar change," and is sustained by similar single sentence summaries on the part of Rabbi A. V. Goodman (Austin, Tex.) and Dr. A. Spiegel (Long Branch, N. J.) who is "unalterably opposed," while Rabbi Raisin is in "favor of improving the calendar as long as it does not affect the traditional Sabbath and holiday." Rabbi Wm. G. Braude (Providence) complains that, "It took me many years to master the elements of the present calendar. Changes would upset my mental poise. Anyway, I am unwilling to tamper with an institution revered by the vast majority of the Jewish people." Rabbi N. Share (New Orleans) explains his position, "While I recognize the need for a better calendar than the one currently in use, I am unalterably opposed to any system which would disturb the seven-day sequence. The argument that the Jewish calendar was subjected to change and modification in the past does not impress me as applicable today. For the present calendar—maladjusted as it is—does not give rise to such pressing social and cultural problems as to require that changes be made even at the expense of the Sabbath. On the contrary, the question of modifying the present Gregorian calendar appears to me as largely academic and hence does not justify an unwarranted attack upon the continuity of Jewish tradition." Dr. Bamberger's expression, more than any perhaps, reveals an attitude entertained by most rabbis who are opposed to The World Calendar, for one reason or another: "It seems to me that the objections of the orthodox—however ill-founded from the standpoint of historical criticism—ought to be recognized. The advantages . . . do not appear great enough to do violence to other people's conscience."

Interest and yet mild indifference is manifested by Rabbi Shusterman: "In a world needing so many other things, I am not ready to oppose or work for changes in the calendar. However, I am ready to be convinced." A most dynamic indifference is apparent in this lengthy yet peppery commentary by Rabbi Albert S. Goldstein (Joplin, Mo.): "I share with my ancient oriental forbears a generous indifference to the entire matter of time. But I think in the interests of world fellowship it would be unfair to foist by dictatorship or even by the tyranny of majority rule a calendar which will offend the pious sensibilities of hundreds of millions. I am certain that orthodox Jews and countless others will still cling to their traditional way of counting time—as why shouldn't they? As a Jew I resent having civil documents imprinted 'Anno Domini' . . . I am no lover of 'Gleichanshaltung' and certainly no worshipper of 'efficiency.' Let be, I say: let bad enough alone."

A number of rabbis do favor calendar reform with reservations. Dr. Philipson indicated this with "I favor the seven-day sequence. I believe

it possible that even with a revised calendar it can be retained." Dr. Freehof is of a similar opinion when he attempts a solution, which revises the present calendar yet retains the seven-day sequence, in these words: "There is only one solution for the problem and that I believe was suggested by the Jews of Frankfurt a number of years ago. I remember that I spoke of it during the debate at the Conference; namely, that instead of adding a year-day every year, which would break the sequence of the weeks, that these year-days be saved up for six years (six not seven because of the leap-day) and a *whole week* be added. If every few years you add a whole week you do not break the sequence of the weeks and you are able to have a revised calendar. I would appreciate it if you would transmit this suggestion to The World Calendar Association."* As we explained, almost half of the checks on "Question Four" are favorable to The World Calendar, even if it implies the loss of the seven-day sequence as we know it, though not all of these are accompanied by remarks. These, however, are illustrative of statements by Liberal Rabbis who seem to endorse The World Calendar as currently constituted and who do append commentaries in support of such conclusion:

Rabbi George Solomon (Savannah): "I am heartily in favor of calendar revision and see no reason why Liberal Rabbis (and for that matter, Orthodox as well) should not approve. The calendar has undergone change from time to time, not always wisely. This proposal is considered and sensible and affects no principles."

Rabbi Halevi Baron (Glasgow, Scotland): "I don't think I should oppose the disturbance of the sacrosanct seven-day sequence; but it does not follow that I should favor an alteration of the present time of Jewish holidays and holy days."

Rabbi Rudolph Coffee (San Francisco): "While I favor revision, I feel a campaign of education should precede any attempt to change our historic calendar. Lay people on first thought may be shocked. The matter should be tactfully publicized."

Rabbi Edgar Siskin (New Haven): "I am in favor of any kind of intelligent progressive calendar reform. The question of tradition doesn't particularly trouble me, especially when balanced against the social benefit which might conceivably derive from some effective calendar reform."

Rabbi Samuel Koch (Seattle): "The adjusted calendar as presented seems acceptable, though no careful consideration has been given it. It does seem to me though that both the 'Year-End Day' and the 'Leap-Year Day' should not be Saturdays. One of them should be Sunday."

Dr. Abraham Cronbach (Cincinnati): "I am with you in the matter of calendar alteration. . . . When you come right down to it, what the Orthodox Jew wants is not so much one day of rest in seven as a day of

* See P. W. Wilson, Sevenfold Formula, Vol. 8, page 212.

intervals with which the Deity will be satisfied. With increasing obliviousness to tradition Jews will eventually be prepared for calendar change."

In general summation and conclusions we find that our unofficial yet informative survey of 1938 reveals that Liberal Rabbis in America are overwhelmingly favorable to the five-day work-week—within or without the framework of The World Calendar—that few are opposed in principle to calendar revision, that most of the correspondents were in agreement with most of the suggestions and conclusions presented in the articles on calendation, that the seven-day sequence encountered an almost even display of opinion.

From the survey it appears that whereas the 13-month calendar 10 years ago met with practically unanimous rejection, The World Calendar, on the other hand, in 1938, ten years later, met with a more friendly response, even a certain endorsement on the part of slightly less than half of all the correspondents who ventured preferences and opinions on this issue in the questionnaire. This difference in response over a decade might be due to the fact that the 13-month calendar sponsored "wandering" dates for the Jewish festivals as well as loss of seven-day sequence and did so with methods that smacked of legislation and duress, that lacked consideration for differing groups—while The World Calendar does not interfere in the least with the round of Jewish festivals though it does alter the seven-day sequence once annually, but this with a method that depends not so much on legislation as on education, that permits of *no* violence to sensibilities, that aims for more than being a convenient "time piece" for commerce, that seeks, in fact, to serve as vehicle for more peace, justice, and goodwill in the world. This very process of The World Calendar depends on persuasion and not pressure, on conversion and not coercion.

Taking all this for granted, what then would be the basis for current Jewish opposition to The World Calendar:

First: On grounds of impaired tradition for Israel by loss of seven-day sequence.

Second: On grounds of greater disunity in Israel, as long as more oppose revision than favor it.

To Orthodoxy, "tradition" is synonymous with conviction, whereas in Reform, "tradition" implies change if a finer and greater tradition may emerge. Hence, to cite few instances, many festivals have been abbreviated, many fast days have been eliminated, many practices have been obviated and many ideas have been reinterpreted so that "tradition" can be permitted to flourish as a veritable "tree of life."

Even many rabbinical conferences often disavow declarations of earlier ones. For example: the Pittsburgh Platform—the basis of Reform since 1885—was wholly reframed for more modern needs (it was even repudiated in large measure!) by the Chicago Conference of 1935. Needs of "tradi-

tion" today do not mean the needs of yesteryear, any more than the Pittsburgh Platform of 1885 represents the sentiments of the Liberal Rabbis' Conference of Chicago in 1935. The very existence and experience of the Jewish Calendar in Israel is testimony enough to major operations on the body calendar.

Appeals to tradition must recognize and realize changes in the cultural continuum known as tradition, for what is now our tradition was once our heresy even as what is now our heresy (even of the calendar!) may in time become our tradition. This is a physical fact which was recognized and utilized as a spiritual force—especially by the "Great Editors" of human experience—the prophets and the poets, the scholars and sages, before, within and after the Bible saga "until this very day."

That the adoption of The World Calendar by Reform Judaism will make for greater disunity in the house of Israel at this time is a claim that merits consideration. Many are the Liberal Rabbis who would agree with all that can be said for historical interpretations of "traditional" and "seven-day sequence," yet who would still refrain from endorsement of a World Calendar because they fear it would antagonize Orthodoxy and would undo the limited harmony that now prevails in Israel.

To examine more fully this "danger of disunity" and relate it to the possibilities of The World Calendar demands a narrative that is "to be continued" at some later date.

Some there are who claim that after current military nationalisms and dictatorships subside or play out—whether by world collaboration before or after world conflict—the world will react favorably, and responsively, more than ever before, to international-mindedness, in ways of welfare, in communication, culture, trade, and too in ways of reckoning with world patterns of life.

A World Calendar, as a World Court, and a United States of the World may indeed be reality, and add stature and strength to the spirit of man, at his bravest and his ablest, who will learn to live heroically instead of die heroically in a world rich in the blossoming of life's beauty and the ripening of experience's wisdom, as ample as the wants of man, yet as lofty as the love of God. . . .

The year 5700 (1939-40), we hope, may yield a greater harvest in international good-will and in world peace than even before. A *more* favorable response to such a world-wide venture as The World Calendar may yet be forthcoming even in Israel, than even the above survey revealed—when world events take a much more favorable turn for world friendship, when fears no longer fill so many human hearts, when distress signals no longer vibrate through three of the "four corners of the earth," when "the still small voice" may be heard again calmly and reasonably for a new world of order, in Time as well as in Space.

A QUESTION ANSWERED

By Charles C. Sutter

Director of The World Calendar Association

ON WHAT ground are calendar reformers justified in breaking the tradition of the continuity of the seven-day week by advocating the one or two extra days in a new calendar and introducing a prolonged Saturday? This oft-repeated question deserves a thoughtful and sincere answer.

It should constantly be borne in mind that we are discussing an improved *civil calendar*, and to be a world calendar it must take into consideration the world's varied population.* Nothing in this civil calendar implies compulsion on any religious body to modify its festivals.

The idea of the one or two intercalary days in the civil calendar was interestingly enough introduced by an Italian Catholic priest, Abbé Mastrofini, in a book on calendar reform published in 1834, which received the important Nihil Obstat and Imprimatur of his superior bishop. On this religious authority and because of the logic of his suggestion, calendar reformers have ever since accepted the one or two intercalary days in a new calendar so as to make the civil calendar regular, ordered and perpetual—every year the same—still preserving the accuracy of the year with its seasons and keeping intact the week.

In The World Calendar the sanctity of the seven-day week with its seventh day, Saturday, and its first day, Sunday, is maintained. In fact, these days are more strongly upheld than ever. By beginning each year with the first day of the week, a Sunday, that day not only receives greater significance but it should inevitably bring to our calendar the benefits of a spiritual opening. And the ending of the calendar with an extra or double Saturday—the Year-End Day, a world-holiday of unity and friendship for the entire world—offers an opportunity on which nations and peoples can meet on a common ground of understanding and amity. It cannot be too clearly emphasized that there will not be seven days of labor

*EDITOR'S NOTE. From an address by the President of The World Calendar Association, Feb. 15, 1939: "Peoples all over the world are becoming more closely united through trade and commercial intercourse, made possible through better facilities in communications and transportations. This was notably apparent last September at the time of the famous Munich Conference when the whole world stood by as one audience through the power and influence of the radio. Had world-wide Standard Time not been adopted in 1884, whereby the whole world became united under one common and orderly system of hours, such ease in assembling an audience at an appointed hour for radio communication would have been impossible. Standard Time proved the forerunner of today's convenient time-keeping in regard to days, hours, minutes and seconds.

"Our calendar, when it becomes in the new World Calendar as stable, ordered and universally as convenient as our clock, will greatly aid in further advancing this unity and cooperation. That our measurement of time must meet and unite in a greater world contact and world cooperation is inevitable. Individual and group outlook becomes of necessity a world-wide outlook, where individual groups merge into one. And Time, as we know it in the calendar, is one of the great universal factors toward this realization."

in the last week of the old year between the two Saturdays. The *gift* of a world-holiday avoids this and also enhances the value of the extra or double Saturday.

The first mention of any particular day in Biblical history appears with the story of Noah, wherein the month, too, receives its first recognition. Through all the intervening years between the Creation and the Flood there is complete silence in the Bible regarding the day, week and month, although there are many references to the passing of years. The seasons, however, received increasing importance at the cessation of the Flood when it was definitely reaffirmed that so long as earth remaineth the seasons shall not cease.

Under Moses we are told in the Fourth Commandment, "Remember the sabbath day, to keep it holy. Six days shalt thou labor, and do all thy work: but the seventh day is the sabbath of the Lord thy God." In this passage it will be noticed that no mention is made of the unbroken continuity of the seven-day week.

According to the Bible a "day" extends from one evening to another evening (Genesis I), and in the Commandment we are to have six days of labor. Now, the day, as we know it, is 24 hours long, divided into 12 hours of daytime and 12 hours of night. Literally defined, these six days of labor would thus lay upon mankind the burden of 72 hours of labor every week. Our modern world has, of course, abandoned this as a needless hardship and religion has accepted that point of view. In fact, many forward-thinking individuals in the realm of religion have approved the five-day working week as in the best interest of man. The machine age has made possible a five-day working week and recognized the need of a recreational day without in any way detracting from the spiritual need and value of a Sabbath or a Sunday.

In another instance pertaining to the story of Creation we are told that the seventh day was a Sabbath on which the Creator rested. With the institution of the Passover, we read that in seven days no leavened bread should be eaten and that "in the first day there shall be an holy convocation, and in the seventh day there shall be an holy convocation" (Exodus 12: 15, 16). This implies that the first day (Sunday) and the seventh day (Saturday) were holy days. But Leviticus 23: 39, says: "In the fifteenth day of the seventh month, . . . ye shall keep a feast unto the Lord seven days: on the first day shall be a sabbath and on the eighth day shall be a sabbath." In this case the first and the eighth days were holy days as they were two Sabbaths. Here, unaccountably, Sabbath is reckoned not as the seventh day but as the first and the eighth days. And furthermore with the first day being a Sabbath, the seventh day presumably was also a Sabbath, with the eighth day being added as a double Sabbath. But in both instances no reference is made to the continuity of the week; rather does

it reveal in the latter citation that there was a cycle of eight days. Here is a striking example of the expansiveness of the Bible which makes it such a vital and powerful force.

Another example of the "spirit-not-letter" Bible is the fact that in Exodus 12: 2, we are told that "this month (Nisan or Abib) shall be unto you the beginning of months: it shall be the first month of the year to you." The traditional year had begun with the month Tishri so that we have here a definite instance of a change in the beginning of the year.* It was clearly recognized in Scriptural time that changes could be made for the people, that the calendar was made for man, not man for the calendar.

Outstanding characteristics which the world's great religious leaders have had in common were their ready renunciation of tradition if mankind might benefit, and their denunciation of slavery to tradition. Moses, Buddha, Confucius, Jesus and Mohammed, all gave new interpretation to life and its needs, and accepted change as inevitable in the world of progress. Religion followed their lead, as when the old-time reckoning of a Bible day from nightfall-to-nightfall (which included the Sabbath) gave way to midnight-to-midnight in our civil, active and modern life. The world at large has accepted the change and no tradition forbade it.

Similarly, our sociological world advocates the shortened labor-week in spite of the command to labor six days out of every seven. There is no logical reason, then, why the spiritual interpretation should not be extended to cover a revised calendar with its intercalary days, especially where the "unbroken continuity of the week" is nowhere mentioned in the Bible. It is sometimes forgotten that there is no indication in the sacred book of an intercalary thirteenth month or how such a month should be intercalated, yet in the Hebrew calendar this intercalation has been going on for many centuries, breaking Scriptural continuity of the year, creating long and short years.

It has also to be remembered that the International Date-Line breaks the continuity of the week in the case of all persons crossing the Line, and forces a technical violation of the Biblical seven-day-week continuity. Yet no objection is raised. Crossing the International Date-Line eastward one must repeat an entire day to keep in conformity with the dates around the world. Thus, when a ship makes a crossing, for instance, on a Saturday it requires counting two Saturdays in succession. That this disrupts the ancient and traditional idea of the continuity of the weeks is admitted, but all faiths, notwithstanding, accept this requirement of modern travel.

The wide interpretation of the Biblical six-day week and the adjustment agreed to on the matter of the repeated International Date-Line stand witness for the more human conception of the traditional unbroken con-

*There are four New Years in the Jewish calendar: (1) civil; (2) religious; (3) tithing (abandoned centuries ago); (4) New Years for trees (active in Palestine now).—Rabbi Martin M. Weitz.

tinuity of the seven-day week for which no historical statement appears in the sacred book.

We know that the original Saturday-Sabbath was changed to a Sunday, to commemorate the Resurrection, and as such accepted by all Christian faiths. As Father Edward S. Schwegler, among the varied comments printed below, pointedly says: "Somewhere along the line there must have been an eight-day week when the day of rest was changed from the seventh day of the week to the first day." Either this was true, or else the Christian world must have celebrated, on one occasion at least, two Sabbaths, one following immediately after the other.

The whole question of the Sabbath will be clarified when its emphasis is placed where it belongs: when the center is shifted from its "geography or location" to its spiritual cause and effect. For the Sabbath or Sunday is a living, breathing, throbbing day, belonging to the world of spiritual things. It is this vital quality, not the framework and place, that is imperative for man to preserve.

Religion today is facing many tests. Chief among them is understanding and serving humanity wherever man in his progressive evolution shall lead. Let religion then be open to change where change is inevitable. Particularly so, as to this change of calendar, *civil* in character, which in no way interferes with observances of *religious* character.

That religion favors the perpetual World Calendar of 12 months is attested by statements from prominent ecclesiastics of many faiths:

Rabbi Ephraim Frisch (Texas) speaking some years ago at a conference of Rabbis: "I am not an authority on the calendar, and have not studied the question of the effects the proposed changes in the calendar will have on the Sabbath. I am speaking with the greatest sympathy for our Orthodox brethren. I think there is entirely too much magnification of the importance of this issue. I think it misrepresents us to the world. If the world is going to be benefited by the change of the calendar as proposed, then we Jewish people of the Reform wing at least ought not to stand in the way.

"I am speaking with due reverence as to what a divinely ordained Sabbath means to me; it means that the human mind and human society thought out under Divine inspiration, a day of rest. The mathematics and the calendar of it do not mean so much to me, and I do not think they mean much to my colleagues. As to the wanderingness of the Sabbath, it may have wandered before, for all I know; I think it did in the process of calendar changes. We are interested in a great institution and idea, and not in its geography or in its time location; and I do not think we would suffer any serious consequences if once a year the Sabbath was an Elijah—a wanderer."

Rabbi Martin M. Weitz (Wisconsin): tells us that according to early Hebrew and Babylonian records "the Sabbath evolved from an *irregular* and fourfold monthly experience to a *regular* weekly event." He further continues: "If it (The World Calendar) sanctified the week additionally in that it can reintroduce an ancient Jewish practice—*a 48 instead of 24-hour* 'coverage' for major rest-days and festivals, it may well be time to lengthen again the one-day and one-week festivals by one day for each. Thus Passover would be celebrated by *all* for eight, not seven days, and New Year's, for two, not one days. Orthodox Jewry celebrates eight and not seven days for Tabernacles and Passover, and two not one, for New Year and Pentecost, in order that Jewry all over the world shall be able to celebrate these festivals simultaneously."

Father Edward S. Schwegler (New York): "In fact, it would seem that no Christian, observing Sunday as the day of rest, can really maintain 'Sabbath continuity.' For somewhere along the line there must have been an eight-day week when the day of rest was changed from the seventh day of the week to the first day. And Christ said, in condemning the too rigorous observance of the Lord's Day, 'the Sabbath was made for man, and not man for the Sabbath.' (Mark 2:27.)"

Archbishop D. Germanos (Greek Orthodox) London: "The 12-month equal quarter plan, which the representative of the Eastern Orthodox Church has supported in many international conferences, seems an entirely logical and effective way of remedying every serious defect of the present calendar. And from the viewpoint of the earnest churchman, it has important implications which go far beyond its merits as an improved civil and business measuring-rod. For the calendar has a religious meaning, too, and a revised calendar will inevitably have an effect in unifying and stabilizing the church calendars of all the great communions. The significance of this movement, in its bearing on church unity, has won for it the attention and support of church leaders."

The Archbishop of Canterbury (England): "Constitutionally, I have a great dislike of any proposal to change long and well-established customs unless there is very strong reason. But I am bound to say that I have found it impossible to resist the plea for reform in this matter, which comes, I think it may be said, with practical unanimity from the representatives of trade, industry and commerce throughout the civilized world. . . . I think it would be a real misfortune if this matter were allowed to drift."

The late *Archbishop Chrysostomos of Athens* (Greek Orthodox): "While the Orthodox Church would prefer a calendar preserving the continuity of the week, it is nevertheless not bound by such a preference if the other Churches agree to acceptance of a new calendar involving interruption of this continuity."

The Rt. Rev. Leopoldo Ruiz y Flores (Primate of Mexico): "Besides the great advantage afforded by the new calendar in every order, I think it is a step for promoting a sane cosmopolitan union between all the nations of the world."

The Rt. Rev. William T. Manning (Bishop of New York): "A fixed Easter and a reformed Calendar is greatly to be desired for many reasons and the Churches throughout Christendom should take the lead in this matter and express themselves through their Governing Bodies."

The Rt. Rev. Ernest M. Stires (Bishop of Long Island): "It has everything to commend it, and I do not know of any reasonable objection which can be advanced against it. It is bound to win. May the victory come soon!"

Mahatma Gandhi (India): "It would be a splendid thing if our 350,000,000 people could have a . . . unified calendar. As most of the Indian calendars are arranged on a 12-month basis, it would obviously be easier to meet on this common ground. . . . I am in favor of a standardized calendar for the whole world. . . . I am always ready to endorse any honest movement which will help to unify the peoples of the world."

The late *Dr. S. Parkes Cadman* (New York): "I shall take opportunity again and again of referring to this matter because I have realized its vast importance, not only for religion, but for the whole world and the world's trade and commerce."

Rabbi George Solomon (Georgia): "I am heartily in favor of calendar revision and see no reason why Liberal Rabbis (and for that matter, Orthodox as well) should not approve. The calendar has undergone change from time to time, not always wisely. This proposal is considered and sensible and affects no principles."

Father Valentin Panzarasa (Italy): "But concerning the general advantages of a fixed calendar there can be no doubt. Every priest who studies the problem cannot but confess that the reform of our calendar would bring many pronounced benefits to the whole Christian world."

Swami Omkar (India): "It is easy to see how happy this arrangement of The World Calendar is for all humanity—regardless of religion or race or nation. It is another step toward realizing the universal brotherhood of man. The World Calendar has therefore my wholehearted approval and support."

Rabbi Edgar Siskin (Connecticut): "I am in favor of any kind of intelligent progressive calendar reform. The question of tradition doesn't particularly trouble me especially when balanced against the social benefit which might conceivably derive from calendar reform."

Rev. J. Santillana, S.J. (Uruguay): "For 25 years I have been following up with the deepest interest the problem of calendar reform; and I have been doing so not through foolish curiosity, but because I am honestly convinced of its great desirability. This conviction rests on four distinct grounds; the movement to reform the calendar is altogether in accordance with reason, even demanded by reason; it is of the utmost usefulness in its objectives, particularly to the Church; it is quite practical, with no grave drawbacks; and, lastly, it will sooner or later meet with success, as has been the case with so many other things that had to be."

Abbé Chauve-Bertrand (France): "Reform of the calendar cannot be a real reform unless it makes the year unchangeable. To do this, we cannot avoid the necessity of breaking the absolute continuity of the weekly cycle by adding a day in ordinary years and two days in leap years. . . . Amid the misgivings caused more or less on all sides by the trend of current events and by the fear of even greater developments, it would be splendid to see the representatives of all the countries of the world meet . . . and adopt a single universal measure of time—the seed, mayhap, of future agreements on other points."

In the light of these opinions it is seen that the world's eternal need of spiritually minded men and women from many faiths, who are willing to reason and to cooperate for the good of mankind, is fulfilled. It recalls the Psalmist's joyful song, "How pleasant it is for brethren to dwell together in unity," and all creeds agree that unity is a spiritual aim of man. A calendar upon which the world can unite is one of these spiritual aims.

The influence of science on life has moved us ahead, we are told, faster during the last two generations than we had progressed during the previous 2000 years.* In spite of this we are living under a calendar 2000 years old, which in itself was an adaption of another which was of 4000 years before that. It may be assumed, then, that religion, already utilizing modern invention—radio, telephone, air mail and flying—will be just as ready to utilize an equally modern calendar. It is as inconceivable for any faith to stand immovable on an ancient and obsolete calendar as it would be for them to use a quill pen or a water clock.

Religion may accept this reform without displaying any national, social or racial bias. Time, as we know it in the calendar, is beyond such racial, national and religious barriers. It belongs to none in particular, because it is the common possession of all. For man never lives to himself alone, and only in transcending the limits of his traditional and personal interests can he approach the divinely established goal of spiritual and cultural brotherhood. A wonderful opportunity lies before the present generation now, and upon its action depends whether in The World Calendar a common agreement arising out of human need shall become, not an unrealized dream, but a gloriously achieved reality.

*Arthur H. Compton in *Science*.

FOLK-LORE OF THE CALENDAR

By Wade Poston, Jr.

TO SAY that the delays which have characterized every phase of calendar reform have been largely the offspring of tradition is not an original statement, nor a novel one. The justification for remaking it here, and for proposing to enlarge upon it, is a belief that the deterrent powers of tradition have never been fully realized or explored. Much space has been given to the reasonableness of calendar reform, but little to the unreasonableness of the factors which stand in its way.

If at first we attribute these delays to national prejudices or to religious practice, we must soon revise that opinion when we have seen the readiness and the interest with which the majority of great governments and great religions have accepted the plan. Or, if we are to place them at the doors of indolence and indifference, we must make the assumption (undoubtedly false) that no one has ever felt the inconveniences of the calendar in figuring his accounts, in estimating his contracts, or in planting his crops. In order to explain the delays we must look beyond these factors to a subtler influence.

For the calendar is much more than a clock that measures the years. It is a great sieve. Through its meshes the thick liquor of 200 centuries has flowed, while each year has left its residue of black magic—its myths, fables, and foolish hyper-orthodoxies. Thus have the errors of the past remained to clog the future.

This result is assignable to an outstanding peculiarity of the measuring system. In reality, time is a straight line; but for us it wears a circular aspect. We speak of next week-end, and of last Thursday. January *returns* once more. The years *roll* on.

The basic confusion, which is easily seen once the problem is stated, is between time itself and certain natural phenomena, such as the earth's revolution around the sun and its rotation on its own axis, which are used to measure time. This point hardly needs extension. What is more important for the present consideration is that this circular conception of time furnishes the means by which superstitions become attached to the calendar, gradually transforming it from an instrument to an institution. As such, it gives both an occasion and a logic to the reviviscence of past events and becomes an integral part of all anniversaries and celebrations.

With these facts in mind, it is not hard to see how the calendar comes to have a special kind of quasi-sacredness. Indeed, when one counts the cords of tradition that fasten the calendar to the past, he no longer wonders at its permanence and resistance to change. For instance, the unhampered measures of space and weight within the last 200 years have been widely

revised over almost the entire world; but, within the last 2,000 years not a single major change has been made in the calendar. The slightest modifications have met with unbelievable opposition. Upon the introduction of the slight changes of the Gregorian calendar, London mobs rioted in the streets—as recently as 1752! Some of the feeling of those times has been set down by Longfellow in the following passage, wherein March is made to tell the fearsome results of meddling with the calendar:

"I Martius am! Once first, and now the third!
To lead the year was my appointed place;
A mortal dispossessed me by a word,
And set there Janus with the double face.
Hence I make war on all the human race:
I shake the cities with my hurricanes,
I flood the rivers, and their banks efface,
And drown the farms and hamlets with my rains."

If we seek less literary, but more spontaneous, links between superstition and the calendar, we need only delve into folk-lore to discover them by the thousands! The following rhyme on St. Paul's Day (January 25) is representative of many others:

"If St. Paul's day be fair and clear,
It does betide a happy year;
But if it chance to snow or rain,
There will be dear all kind of grain;
If clouds or mist do dark the skie,
Great stores of birds and beasts will die;
And if the winds do flie aloft,
Then war shall vexe the kingdome oft."

Better known, perhaps, is the St. Swithin's Day weather superstition (July 15):

"St. Swithin's Day, gin ye do rain,
For forty days it will remain;
St. Swithin's Day, and ye be fair,
For forty days 'twill rain nae mair."

The following lines are the corollary:

"St. Bartlemy's mantle wipes dry
All the tears that St. Swithin can cry."

A question which can be aptly put at this time is the extent to which these ancient humbugs influence present-day attitudes toward the calendar. The spirit undoubtedly remains, making account for that enigmatical prejudice—the feeling that it is "bad" to change the calendar. But does the letter also remain? At least, it is remarkable how many newspapers deem it worth while to call attention annually to the incorrectness of the St. Swithin's Day prophecy, and, even more so, to the groundhog's sally on February 2.

This latter superstition is, among Americans, perhaps the best known

of all. Although its early history is obscure, it seems definitely to follow from one of the often-repeated, Old English distichs:

"A' the month o' the year
Curse a fair Februeer."

—which was, possibly, a more or less sound piece of farming advice. Later, this thought was narrowed down to Candlemas Day—the day of purification and the most significant in the month. The fact that February derives its name from the Latin *februa*, or "means of purification" made the transition easy, and, in its superficiality, is probably typical of the growth of many similar delusions. This can be seen in the following rhymes:

"If Candlemas Day be dry and fair,
The half of winter's to come, and mair;
If Candlemas Day be wet and foul,
The half o' winter's gone at Yule."

The groundhog is an addition of recent times: American farmers of the Middle Atlantic States are thought to be the originators. According to this superstition, if the groundhog sees his shadow when he makes his supposititious exit on Candlemas Day, he is frightened and returns to his hole. The result is that winter continues for six weeks longer. However, if the day is cloudy and shadowless, the groundhog stays on the surface; and the winter is over.

The mechanics of this addition are not clear. It may be that the hibernation of the groundhog is disturbed by the mid-winter thaw, causing a few specimens to be flooded out by sunny weather. At any rate, considerable importance is attached to the belief in rural America. Even the sage *New York Times* annually devotes to it a not-too-serious column.

Another peculiar superstition—one that has made an entire business unnecessarily periodic—is the common idea that it is injurious to eat oysters in a month whose name is not spelled with an "R"; a saying credited to Butler's *Dyet's Dry Dinner*, 1599. The French have this:

"Boir eau point ne devez
Au mois ou 'r' trouverez."

which can be rendered as, "You should never drink water in a month in which you can find an 'r'."

Not only days of the month, but also days of the week—particularly Friday—carry a burden of superstition. It is considered unlucky to start anything new on Friday, especially to undertake a voyage or to be married. With some justice, Friday is looked upon as a notoriously bad day for financial panics; but this fact is traceable not to any occult power, but to the close approach of the week-end holidays. Friday the thirteenth is considered extremely unlucky by those who still lay a certain emphasis on "luck." An interesting reaction to this superstition has occurred in the

formation of several "Friday the Thirteenth Clubs," whose members meet on the day indicated, and who walk under ladders, fill the room with black cats, drop horseshoes, and perform other rites in defiance of superstition. The very fact that such organizations do exist emphasizes how widespread are the beliefs concerning Friday.

This superstition apparently dates back to medieval times and to the acceptance of "God's Friday" (or Good Friday) as the day on which Christ was crucified. Likewise, the belief concerning the number thirteen relates to the Last Supper. Originally, it applied only to situations where thirteen persons were seated at the same table—one was to die within a year. Later, the conception of thirteen as an unlucky number underwent a process of growth; and, because of associations already established, it was readily linked to the calendar and to Friday in particular.

A somewhat lighter tradition attaches to Monday, which is as famous for being "blue" as is Friday for being "black." Monday is the historical washing day. As such, it has been enshrined in the nursery rhyme: "This is the way we wash our clothes; All of a Monday morning." But this apparently harmless doggerel was recently assigned by a national convention of laundryowners as one of the chief causes of detrimental peak-loads in the early part of the week.

There is hardly any need to go further with this list. Indeed, this article has examined only the more curious superstitions and not necessarily the most powerful. Such celebrations as Hallowe'en, All Fools' Day, and St. Valentine's Day are cases in point. Many specific areas have local traditions of great importance: i.e., the Mardi Gras at New Orleans, or the May-Day beauty bath at St. Arthur's Seat, Edinburgh.

No less important than the general beliefs just discussed are individual traditions, such as birthdays and various family anniversaries, which always in the past have been a main source of objection to calendar changes. George Washington, for example, is said to have been greatly confused by the change from the Julian to the Gregorian system. It is now customary to consider that he was born on February 22, in the year 1732. However, according to the calendar then in use, the date of his birth was February 11, 1731. Washington was doubly affected: first, by the dropping of 11 days from the calendar, and second, by the moving of the new year from March 25 to January 1. He continued to celebrate his birthday on February 11, although in signing important documents he indicated the disparity by giving both dates.

These problems are far from being matters of the past. They must be faced by both the present and the future. It is to be hoped that, at the next opportunity to introduce The World Calendar, some five years hence, a program of education will have nullified the force of false tradition and made possible the adoption of this sensible timing system.

KEEPING TRACK OF TIME

By GEORGE E. POST

An Article in the *Buick Magazine*, December, 1938

SET an engineer to clock a fleeting motor-car around the Proving Ground track and he will call for precision apparatus and phrase his answer in split seconds.

Primitive man set himself the far more intricate task of measuring the year. But he had no laboratory equipment to help him. He was not even aware that what he was trying to time was a circuit of the earth around the sun.

He had no precision instruments for his purpose. As natural units, he had at his command only the day, set by the succession of darkness and light; the month, marked off by one set of phases of the moon; and the year, indicated to him by the succession of the seasons. But fit these together and they do not come out even. From the very beginning, man had to deal with stubborn fractions. He was forced to cut and try.

In the light of these circumstances, the ancient calendar is a truly remarkable achievement. Scanning the heavens from deserts, mountain peaks, and headlands; checking seasons and festivals and sun and moon; comparing results from widely distant points and over centuries, priests and star-gazers measured the last tag end of time with amazing success.

Not until 996 A. D. was the clock invented. Yet, 1000 years before that date, wise men had charted the year. In 46 B. C., they introduced a calendar so accurate that it has needed revision only twice since that time —so accurate that a 1,500-year test run was necessary to determine the extent of its error. A brilliant achievement in precision measurement!

Not one of the present-day proposals for calendar revision includes any modification whatever in existing figures for the length of the year as thus determined by the pagan world of antiquity.

It would be entirely fitting on the first day of next month to make the routine business of hanging up a new calendar into a little ceremonial in honor of human ingenuity which could so accurately observe and plot the facts of nature in the vast laboratory of the earth's orbit.

The two cardinal dates in the history of western world calendars are 46 B. C., when the Julian calendar was decreed, and 1582 A. D., when the Gregorian, under which we operate, was introduced. But in neither case did the change gain immediate acceptance.

England, for example, did not come into line with the rest of Europe and officially adopt the Gregorian calendar until 1752. By that time, the change involved dropping eleven days from official reckonings, and was achieved only against bitter opposition. People cried out that their lives

were being shortened. Angry mobs surged through London streets screaming, "Give us back our eleven days!"

Calendar changes have resulted in some curious instances of confusion. A familiar one has to do with Washington's birthday. We have heard from childhood that he was born on February 11th, and have been told why we celebrate the event on February 22d. This mystery of Old Style and New Style calendars is usually mentioned in encyclopedias when giving dates for both Washington and Franklin.

But was Thomas Jefferson born on April 2d, April 13th, or April 24th? Reference books give his birthday as April 13, 1743, with no mention of calendar styles, although the British world did not officially adopt the new one until nine years later.

Historical dates give other instances. The battle of Blenheim, for example, looms large in British annals, yet the two contending generals must have reported the engagement as taking place on different days. The British records would have been dated August 2, 1704; the French, by New Style reckoning, August 13th.

Though an important time measurement from very early times, the week is not a natural time unit. It seems to have developed first as the interval between market-days. In fact, among some tribes today, the same word serves for *week* and *market*. The interval has varied widely in different parts of the world, weeks of three, four, five, six, and eight days having been used. The seven-day week originated in western Asia, whence it spread into Europe.

Among many agricultural tribes in Africa, market-day came to be a day of rest, on which a visit to the market was the only work allowed. Later prohibitions upon trading as well may have led eventually to the institution of the Jewish Sabbath.

Nor is there any justification in nature for beginning the new year on January 1st. A year can begin at any time, as witness fiscal years everywhere. Among the ancients, the vernal equinox seems to have been the starting point.

February was the last month of the Roman calendar, and so the one in which any necessary adjustments were made, which explains why "leap year gives it twenty-nine."

English records started a new year on March 25th until the official adoption of the Gregorian calendar brought the empire into line with the rest of Christendom by starting the year on January 1st.

'HASTEN THE DAY.....!"

By FREDERICK CLAYTON

(Magazine Editor and Educator)

WHETHER you received your elementary schooling in the United States or in some other country, if you were a healthy, normal school child, undoubtedly you spent many hours in every school ear puzzling out for yourself the single holidays, counting the number f days in each of the longer vacations; trying to remember which day f the week Christmas fell on last year and wondering what day it would all on next year (not having by you at the moment anything but *that* ear's calendar); wishing you could be certain that you knew how to reckon ne date for Easter Sunday; guessing at the number of days between Easter and the last day of school; hazarding another guess as to whether r not that year was leap year or the next would be; totalling the number f days in the next summer's vacation, et cetera. For school calendars vere never fixed things, never the same from year to year; and with the ossible exception of the calendars of a few of the more prosperous private chools, they were seldom printed in black and white in advance, for all o read who cared. Most of us did care, furthermore: for what child—nywhere—is so much in love with school that he is not interested in nowing just what the year holds for him, how many working days and ow many days he will have for himself?

Children are still wondering about such things, wondering because it is ifficult for most of them to understand (and even more difficult to re-nember) the answers to problems involving the calendar. And as long as ve continue to be guided by our present system of time-reckoning this will e so. A fixed and perpetual school calendar is still an impossibility, and vill remain so as long as it is necessary to base the school calendar upon system as obsolete as the Gregorian calendar. Most of us can't begin to emember from year to year the actual day of the week or the day of the nonth on which the various holidays fall—unless of course we stop to eckon them anew, probably with the aid of a calendar pad—and even if ve are able to remember them, is it reasonable or even sensible to fill our rains with so many facts of relatively minor importance? The calendar-rinter's business must certainly have been developed to save us this trou-le, much in the same way that the printer of business supplies has found t profitable to set down in neat, inexpensive, handy-sized volumes the nterest tables that do so much to save the wits of the busy banker.

In addition, then, to the fact that every important date of a general ature shifts with each new year, one must also take into account the fact hat every date of a strictly scholastic nature also shifts. Even for the

average adult all this is not easy to keep track of—it is not so simple to know the Gregorian calendar, really to know and to remember it—and if the majority of adults have difficulty in understanding, and in remembering what they understand from this year to the next, how much more difficult must the task be for a child!

Not, of course, that a child's needs in such respects are very great. It goes without saying that the teacher's is the harder lot, for it is the teacher who is faced with the problem of clarifying for his young charges the reasons behind the Gregorian system, and it is the teacher who must spend in advance of every school year countless hours in planning and replanning the year's work schedule.

These last are the hours that with more profit to education might better be spent in the pursuit of other and more important duties. The laying out of a school calendar, as must surely be apparent to everyone, is an intricate, involved undertaking; and even though the work is not insuperably difficult, perhaps one of the worst things against it is the enormous amount of time that it consumes. One is almost tempted to say: the enormous amount of time that can be wasted upon it. Nor is that all. Once every 12 months the job must be done all over again.

It is necessary to keep so many things in mind when planning a school calendar: one must make sure that the special days of this religious group or that do not conflict with one another; one must try to distribute the shorter holidays as evenly as possible throughout the terms; the year must be broken as nearly as possible into semesters or quarters of equal length; and the yearly schedules when finished must be revised to coincide with those of certain other schools. Even when the task appears to be completed, as likely as not the result will have to be scrapped and the whole process gone through with once again. One soon realizes, when he attempts to plan the year's schedule for a school, that uniformity and orderly symmetry in the scholastic calendar are utterly impossible to achieve.

Consider for a moment a few of the chief holidays of the average American school, public or private (for it is the average American school which is closest to hand). In most sections of the country the school year begins immediately after Labor Day. But when does Labor Day fall, and does it ever fall twice in succession on the same day of the week or the same day of the month? Then ask the same question about any other important American holiday of a patriotic or national character: Columbus Day, Armistice Day, Thanksgiving Day, Lincoln's Birthday, Washington's Birthday, Memorial Day, Independence Day. The answer in every case will be the same. Each of these holidays, and many others, is likely to have an important place in the activities of the school; and since certain of them result in serious interruptions in school work, they must therefore be taken into careful account when the yearly schedule is being laid out.

Wouldn't it therefore be easier by far for pupil and teacher if one had simply to learn that Labor Day *invariably* falls on Monday, September 4; that Columbus Day is always on a Thursday, the 12th of October; Election Day on Tuesday, November 7; Armistice Day on Saturday, November 11; Thanksgiving Day on Thursday, November 30, and so on?

How much simpler to learn, early in life, that Lincoln's and Washington's birthdays are on a Sunday and a Wednesday, respectively, February 12 and 22, or that both holidays are celebrated together on a single week-end—to learn this simple fact once and for all, and never to have to forget it and learn new facts about the day with each new year? All of which, and more, would be possible with the adoption of the equal-quarter, identical-year World Calendar.

And the holidays named above are but the lesser single days. For almost every school the really important holidays are the longer vacations at Christmas, between terms, at Easter-time and during the lengthy summer period. If Christmas were to fall, year after year, on Monday, December 25, as it does in The World Calendar plan, with Year-End Day and New Year's Day coming along a little later, the Christmas holiday season might be celebrated by schools with much greater economy of time and with complete uniformity from year to year. Uniformity among schools, also, since in all probability the addition of another full week of vacation to the Christmas-New Year's week would become a general practice in all schools throughout the land, so making closing and reopening dates the same for all educational institutions. That much alone would be a worth-while gain, for because of the present wide differences between the calendar dates of different schools it is quite possible for two school-age members of the same family to find that their schedules prevent their spending more than two or three days at home together during the holidays.

Much the same thing holds true for the Easter holiday. And when one thinks of mid-term or summer vacations, which are related in a very special way to schools and to the ways in which school work is planned and carried out in definite periods, the adoption of some really rational system such as The World Calendar seems even more definitely indicated. That depends to some extent—at least in the case of term-break holidays—upon whether the school is conducted according to the semester or the quarter system, since it is usually only with the semester system that the custom of allowing term-break holidays prevails. As for athletic meets, teachers' meetings and educational conventions, official examinations, graduation exercises and the like, with uniform yearly calendars for all schools in the country, it would be a far simpler matter than at present to fix upon mutually agreeable dates for such events.

Equal division of the school year into quarterly or semi-annual periods is at present, of course, impossible. The wandering week and the irregular month are chiefly to blame for that. The required number of teaching days cannot be easily and equably distributed throughout the year so as automatically to take care of "simultaneous" school openings, of the dates of various vacations and holidays, of convention and committee dates, of periodic test and examination dates and the like. But with The World Calendar in use the dates for term divisions, and those for term-division holidays, might mark off truly equal work periods, fixed and invariable throughout the year, with the rest of the dates of the school calendar falling into their proper and appointed places and remaining there unchanged from year to year. Thus effecting, to point out but one of the innumerable advantages, certain definite savings in printing costs for those schools using printed yearly bulletins.

No, it will not be until The World Calendar has been universally adopted that the trials and tribulations of the annual school calendar committee will be over; but when that time does arrive the committee will then be able to disband—permanently—and thereafter a single carefully planned calendar will serve for all time! Sensible, progressive-minded educators and teachers may well pray that the day will come soon.

LITURGY AND REFORM

By the Abbé Chauve-Bertrand

Eminent Roman Catholic Authority on the Calendar

Translated by the Rev. Edward S. Schwegler

THERE is, in our day, an effort to give proper honor to the liturgy—to give it the important, if not principal, place which once belonged to it. This movement was born from a lassitude, from a sort of anaemia of the intelligence and of the heart, from that *taedium vitae*, to quote Guardini[1], which is a consequence of weakness. A whole ensemble of abstractions, which have slowly dried up and exhausted the life in us, is to be cast off. Instead of living religion, as in the first twelve or fifteen centuries, we intellectualized it too much—"we were too desirous of making of it an edifice of verbal combinations," declares one of the editors of *l'Ami du Clergé*[2]; we replaced concrete values with signs and this resulted in our losing sight of the realities, and no longer understanding how to value either the signs or the things signified. Hence a disaffection that invaded many minds, and a movement of renovation which has made its way. The point in question is no longer to think in formulae but to regain contact with things.

A long and difficult task: not, certainly, a regression towards a sterile archeology, however admirable, but a renewing, a revivification of the eternal religious strength.

We define: Liturgy, in its largest sense, to use the words of Cardinal Schuster, is that ensemble of sacrifices, rituals, chants, artistic inspirations from the souls of poets, writers, painters, sculptors and architects, from the collaboration of which there resulted that vast and ordered synthesis of thoughts and sentiments of love towards the Supreme Good, which constitutes real worship in spirit and in truth[3]. Liturgy, thus understood, is a marvelous poem, which surpasses all the other masterpieces of civilization. Let us add that the liturgy does not comprise only prayer, which unites the Church with Christ and God; it contains as well and transmits to us the divine word. It is because of this that the liturgy not only exercises the efficacy of its prayer on the heart of God; it also displays a preponderant action on the human soul, of which it assures, in a particular manner, the religious education. In a word, the liturgy is both *Lex orandi* and *Lex credendi*.

The liturgy as *Lex credendi* is not a matter of a catechism or of a medi-

(1) Romano Guardini: *L'esprit de la Liturgie*, Paris, 1930, p. 51.
(2) *Ami du Clergé:* May 11, 1933, p. 298.
(3) Schuster: *Liber Sacramentorum*, V. VI. ch. II; *De l'efficacité du cycle liturgique annuel pour l'éducation de la piété populaire*, pp. 50-65.

tation based on abstractions or metaphysical terms, to the exact sense of which the people almost never penetrate. An eminently popular educator, liturgy takes man such as he is: body and mind; and succeeds in grasping the intelligible only through perceptible realities. So it is by addressing itself to the eyes, the ears, the imagination, that it succeeds in convincing the mind, in subjugating the heart; and it does this through the charm of all the arts, in buildings that are themselves works of art.

As for the expression of devotion (*Lex orandi*), the ancient Fathers knew only the liturgy. "The Church," observes Saint Ambrose, "presents the most perfect form of social life. In the same manner as it was redeemed collectively, and as it grows collectively, likewise it prays collectively." This collective devotion is as vast as the Church itself, and holy with its holiness, and it has no need to borrow anything from particular devotions, for it contains all of them in a high degree. This devotion—from the latin *devovere*—which allows man to give himself absolutely to God, is the essence of the Christian life, drawn from the first and purest sources. It was by such devotion that the first apostles converted the peoples of Europe. Such devotion was the great religious educator of the Christianity of the Middle Ages. Through it the people understood and lived their faith. "And the occasion is good," Guardini says again, "for one to proclaim one's admiration for this epoch of so-called darkness, and one's disdain for the immense fatuity of our times[4]."

Things began to change from the beginning of what we are accustomed to call the modern epoch. The great liturgical life of the Middle Ages was succeeded by a liturgy which is no more than a garb of holiness, which is more and more reduced to a decoration, to an exterior and uncomprehended ceremony. Religious life slips into a formula, and grows enfeebled. It loses its contact with life's essentials; it no longer holds life fast, nor forms it, nor directs it. Let us not today be too certain that, with all our efforts, the science of God is making progress among Christians. And too often the lack of progress is not the fault of the people. Do we not strive constantly to attract them to such and such particular practices, which are no longer truly "devotion," but sentimentalism, "pieusarderies" (false pieties), one might even say?

Most fortunately a reaction is appearing. To draw again upon the sources, to prevent the soul from being withered away by this cloud of words and formulae, to restore to the liturgy its eminent utility for the plenitude of Christian life—such is a part of the vast program which is being carried out and which already can count many ardent champions.

The liturgy, to again quote Cardinal Schuster, contains an ascetical teaching more authoritative than any other, a learning which is not that

[4] Guardini: *op. cit.*

of some private scholar, but of God himself, a doctrine which is altogether comprehensive because it does not rest exclusively, as so often do personal devotions, on a particular mystery, but unfolds and explains to the faithful with a marvelous order through the course of the whole year the great panorama of the Christian dogma.

* * *

The holy cycle of the liturgy, parallel to the natural course of the year, begins with Advent, the four weeks of which represent pre-Christian times, supposed to go back to the origin of the world. In the autumn, a little sooner than the present beginning of Advent, the ancient peoples of the Orient used to begin their year, and they placed the creation of man in the season of the fruits. The diminishing of the physical light in these weeks of expectation resembles, as dom Guéranger remarked, following the Fathers and ancient liturgists, the darkening of the truths of the primitive revelation because of the Fall. This diminishing goes as far as the birth, at Christmas, of Him who, by the Divine Word, would rekindle the brilliance of the divine light among men, even as the sun, reviving in these same days, brings back the physical light to the earth.

From midnight to morning, the darkness grows less and gives way to the day that is being born. From the end of the winter solstice the nights are less long, the sun begins to make the earth warm again, the fields are covered with green, new leaves and flowers appear on the boughs of the trees. Just as the day, just as the year, so also the child grows. He comes to the springtime of life, to the age when everything, in the young man just as in nature, is filled with hope. For its part, the pious soul who undertakes its sanctification must begin with the labors of the purgative life, by the aid of which it may disengage itself from the shadows of sin which obscure spiritual sight. If it has the courage, it must go from mortification to mortification, up to the point where the rays of the divine Sun will illuminate it completely.

All these truths, natural and supernatural, are connected with Lent and the feast of Easter. Here are the terms in which this connection was explained by dom Guéranger, in his Liturgical Year:

"The wise foresight of the Church, which disposes the visible work of this world and the supernatural work of grace in full harmony, wished to place the resurrection of our divine Master in these days when nature herself seems also to come forth from a tomb. The fields display their green, the trees of the forest have found once again their foliage, the song of the birds gladdens the air, and the sun, radiant symbol of the triumphant Jesus, pours floods of light on the regenerated earth. At Christmas time, this luminary, disengaging itself with difficulty from the shadows which threaten to extinguish it forever, showed itself in harmony

with the humble birth of our Emmanuel, conceived in the midst of a profound night, and wrapped in the swaddling-cloth of humility. But today, to speak with the Psalmist, the sun is a giant who bounds forth on the course and there is not a being who does not feel himself reanimated by his vivifying warmth[5]."

"The work of the reparation of mankind," writes Cardinal Schuster, "begins in Lent with the sacred forty days of fasting in the desert. Thanks to them, the fire of passion is quenched, and the soul becomes better disposed to listen to the Word of eternal life which in former times terrified the prevaricating race when it said to Moses: 'Speak to us yourself, but let not Yaveh speak to us, so that we be not struck dead.' Lent is then like a period of training, a vast course of exercises during which time we apply ourselves, of our own will, to acts of the kind which we call purgative. Bodily fasting and the exercise of mortification have as their object the purifying of the senses, the curing of the culpable blindness of our spiritual faculties which is an effect of the Fall and of sin[6]."

After Easter and the spring equinox, the days continue to lengthen until they attain the full extent of their duration. From the morning also, the sun mounts in the sky; it makes its physical ascent; it arrives at the zenith at noon, which is the hour symbolical of Christ's ascension. The Carmelites of the reform of Saint Theresa honor with a particular veneration this hour of noon on the day of the Ascension.

Similarly, during the paschal time the conception of the Christian life becomes wider. The obscure and difficult path of the purgative road is succeeded by the splendors of what the spiritual authors call the illuminative life. And this is where, with the time of Pentecost, we speak of the life of perpetual union with God.

On the subject of Pentecost, let us hear what the prince of the contemporary liturgists, dom Guéranger, already quoted, has to say:

"See at what moment of the year the divine Spirit comes to take possession of its domain. We have seen our Emmanuel, sun of justice, rise timidly from the shades of the winter solstice and mount in a slow course to its zenith. In a sublime contrast, the Spirit has sought other harmonies. It is fire, fire which consumes; it breaks forth upon the world at the moment when the sun shines with all its splendor, when this luminary contemplates the Earth covered with flowers and fruits, and caresses it with its rays[7]."

The Holy-Spirit is a Spirit of Love which embraces and consumes like a glowing fire. Its gifts diffused in the soul cause to grow there the virtues, which have been compared to fruits, as Truth has been compared to physical light and to flowers. The time of Pentecost is the one in which

[5] Dom Guéranger: *Année liturgique, le temps pascal*, V. I, ch. II.
[6] Schuster: *op. cit.*
[7] *Année liturgique, le temps pascal*, V. III, the day of Pentecost.

the heat is strongest; it is the season of harvests and vintages. For the sun, before receding, leaves us what we will need for subsistence until its return. In the same manner Christ, before leaving the Earth, instituted the Eucharist, the feast of which, formerly celebrated on Holy Thursday, is celebrated with more glory on Corpus Christi, in harmony with the first-fruits of the wheat. Under the warmth, at once strong and gentle, of the Spirit of Love, the role of which is not so much to speak as to act, not so much to teach doctrine as to realize it by sanctification, the souls which remain united to the boughs of the Church, which are not bitten by the never-dying worm nor shaken off by the tempest, reach that spiritual maturity which we call holiness. And now comes the feast of All Saints, celebrating the merits of the martyrs, the father confessors, and the virgins—supernatural fruits of grace culled on the earth and transported into celestial granaries.

In corporeal life at this stage, man reaches an age of maturity. He is no longer content with hopes and projects; the time for school and studies is over; it is the moment when the heart, the character, and the volition, strongly tempered, undertake the realization of the works which constitute the most beautiful illustration of a life usefully employed. And so we must think to set up a reserve of good deeds which will permit us to enjoy a merited repose during our last years. For human life, like the day and the year, has a decline. Old age has been compared to autumn and to the evening: not in the soul, which does not know old age at all, but in the body. Just as the sun and the length of the days decline, so also, in human life, the physical forces diminish.

In the natural year, daylight, overcome by darkness since the equinox of September, yields more and more to the invasion of night. The first frosts appear, the leaves fall, it is the moment to recall the memory of the Dead. And so, in order to complete the series, the liturgical cycle ends on the 24th and last Sunday after Pentecost with fearful precepts on the end of the world; because this world itself must also have an end. From then on we are plunged more and more into night, symbol of death and the judgment, marked in former times by the sadness of the ancient peoples. This leads us to the return of Advent, awaiting the renaissance of the cycle, on the following Christmas[8].

The liturgy of each day is itself the image, in miniature, of the great yearly cycle. Witness the first words of the hymn of Prime: *Jam lucis orto sidere,* and of that of Compline: *Te lucis ante terminum,* etc.

From all this it is evident that we must not separate the ecclesiastical year from the natural year, any more than we may divorce religion from

[8] Chauve-Bertrand: *La question de Pâques et du Calendrier,* Paris, 1936, pp. 221-229: *Harmonies du Cycle liturgique avec l'année solaire, la végétation annuelle, la vie humaine et la croissance mystique de l'âme.*—Pius Parsh: *Le guide dans l'année liturgique, passim.*

the human sciences, or the life of the soul from that of the body. They complete each other, uphold each other, and reciprocally elucidate each other. We must restore the synthesis. The Liturgy utilizes all the sciences and all the arts; it is the supreme expression of a civilization. In this veritable compendium of superior learning, there is ascetical and mystical doctrine, and also dogma, which are distributed as in a year's course, and are constantly being enriched. The liturgy is a logical and historical consequence of religion, a doctrinal résumé of the Creation, of the Fall, and of the Redemption. Every belief as well as observance is included therein, and a little also of what it has been possible to conserve of old traditions of the ancient cults and of the pre-Christian myths themselves, the study of which is not always without interest, *teste David cum Sybilla.*

In the matter of dogmas, that of the divine Unity and of the Trinity of persons, to speak only of one, is extensively explained in the feasts of Christmas, Easter, Pentecost, and the Trinity. The unity of the cycle is the image of the Unity of God; but directly, in this cycle, appear the three epochs of the liturgical year: the time of Christmas, paschal time, and the period after Pentecost, which reflect the three Divine Persons. This same reflection of the Trinity is visible also in the three stages of the sanctification of the soul which have been spoken of: the purgative life, the illuminative life, the life of perpetual union with God; and it is to be found equally in nature, which is another work of God. It is found there in the three manifestations of the life of plants: the leaves, the flowers, the fruits; in the three properties of the mineral realm: weight, light, and heat, etc.[9].

One can thus better understand how all the sciences, all history, and all sane philosophies are resumed, popularized, dramatized, and brought down to the level of all by the Liturgy, which truly becomes the food of souls. *Justus ex fide vivit.*

* * *

And thus one may better evaluate the purpose entertained by Pius X in cutting out of the *Proprium sanctorum* numerous Saints' offices and returning to honor and to the first place the ancient *Propium de Tempore,* from the first Sunday of Advent to the last Sunday after Pentecost. For the annual liturgical cycle possesses a rigid unity, the integrity of which is necessary for beauty, and which has been broken by too many particular feasts, or commemorations of Saints. During nearly the first ten centuries, Saints' feasts were recognized only in small numbers. There were those of the Mother of God, those of the Apostles and the Evangelists, distributed approximately at the rate of one per month, a few feasts of the principal martyrs, like Saint Laurence, the two feasts of the Cross, and that of the holy Patron. The Church demonstrated her wisdom by using these feasts

[9] Coberthrambe: *Le Règne du Frère,* Paris, Alcan, 1936, pp. 103-114: *Trinisme.*

with taste and a perfect sense of proportion to adorn her annual cycle, breaking its continuity, from time to time, in the manner of a parenthesis, to demonstrate practically, by means of a few well-chosen examples, how the religion of Christ can be lived and realized by the faithful.

But then, progressively, the feasts of the Saints became more and more numerous and were entered in the general calendar of the Church. They spread over all the days, Sundays included, because, having generally a double rite, they carried that rite over to the ordinary Sundays, which then had only a semi-double rite[10]. There thus happened in the liturgical cycle what has happened in certain churches, where too great a number of statues made us lose sight of the Tabernacle of the living God. We must, then, admire the work begun by the Apostolic See, under Pius X, who was inspired by the traditional principles of holy Pius V and Benedict XIV to cut down the Proper of the Saints, and restore to the liturgical year its primitive lines. "Certainly," declares Cardinal Schuster, "all has not yet been accomplished; but the enterprise is a delicate one and must be pursued only according to sure and highly discreet rules."

To continue the reforms happily begun by Pius V and fully realize them —at present they are flagging—it would first seem necessary to remodel the framework itself of the liturgical cycle, that is to say, of the calendar. This framework should be rendered less changeable and the paschal cycle of mobile feasts should be stabilized. Only thus can the reforms be completed, for, if we prescind from the Ritual, the calendar is, as everyone knows, the key to all our liturgical books.

[10] Kellner: *L'année ecclesiastique et les fêtes des Saints*, 1906; Dom Guéranger: *Institutions liturgiques;* Dom Cabrol: *Le Livre de la prière antique*, ch. XVIII, *l'année chrétienne;* Dom Guépin: *De ratione Breviarii romani-monastici efusque emendatione commentarium*, 1908; Mgr. Piacenza: *In Constitutionem "Divino afflatu . . . commentarium,"* Rome, etc.

DEATH OF SPANISH CHAIRMAN

THE REV. FATHER LUIS RODES, S.J., Chairman of the Spanish Calendar Reform Committee since 1935, died at Palma, Majorca, on June 7th. Father Rodes was Director of the Ebro Observatory and was a scientist of world renown. Under his direction the Spanish Calendar Committee secured Spain's approval of The World Calendar. In agreeing, the Spanish Government statement said, "The solution (World Calendar) now put forward is superior to all others suggested up to the present, in view of the fact that it divides the year into equal half-years and quarters and fixes in a uniform way the position of the days of the week for all years and quarters to come. The division of the days of the year would create fewer difficulties for the interconnection between the Gregorian calendar and the reformed calendar, thus facilitating the comparison of observations and work carried out, and the collection of statistics of all kinds with the greatest possible accuracy."

CURRENT PRESS COMMENT

Stabilizing Holidays

Westchester (Pa.) News

We are all interested in holidays. In the matter of holidays and anniversaries, we are very meticulous in preserving a definite date, month and year for remembering national and personal anniversaries, but we strangely forget and completely ignore the weekday on which they fell.

In the new World Calendar, Christmas will always come on Monday, leaving the day and evening of Sunday free for the holy observance of the Christmas spirit and giving to Christmas a spiritual preparation. No longer would Christmas be thrust into the business week, as it frequently is today.

Keeping Time

Parker (S. D.) New Era

We need another Pope to start us right again on a calendar correction, as did that fine old man and scientist, Pope Gregory, way back in 1582.

Research as to historic computation of time, and as to the use of our calendars, is a fascinating study. Very little of our present calendar is modern. Much of it consists of relics of old pagan barbaric religious worship. We need a new and modern calendar, such as the one proposed by advocates of The World Calendar.

The writer has been a member for ten years of the calendar reform association, and believes in a simplified calendar.

History of Calendar

New York Sun

An exhibit which traces the story of the calendar from the year 4236 B. C. to the year 1944 A. D. is on display at the New York Museum of Science and Industry in Rockefeller Center, sponsored by The World Calendar Association.

By the use of displays and projection slides, the exhibit reviews in sequence the five calendars which have been worked out and used by man since he first began to measure time in terms of days, months, seasons and years. There are the Egyptian calendar, Julius Cæsar's adaptation of this calendar, the Augustan calendar, Constantine's calendar, the Gregorian calendar of the present day and finally the proposed World Calendar for a more uniform and co-ordinated arrangement of the various time divisions.

New Plan Visualized

Raleigh (N. C.) Union Herald

The World Calendar plan is being studied seriously throughout the world. It is visualized—in an exhibit in the New York Museum of Science and Industry in Rockefeller Center, New York, where a great many persons are furnished an opportunity to obtain a sort of birds-eye-view of how men have reckoned time through the ages. They behold the defects in the existing "horse-and-buggy" arrangements for the measuring of time, and other more recent arbitrary adjustments of the Julian calendar which were partly amended by the Gregorian calendar, when Washington was a young man.

Year Cut in Quarters

Christian Science Monitor

This week The World Calendar Association opened its exhibit telling the story of gradual improvement in mankind's method of reckoning time by the calendar, at the New York Museum of Science and Industry. The moving panorama of the centuries chooses the year 4236 B. C. as its starting point and picks A. D. 1944 as the time for another momentous calendar change.

The review of the calendar shows the earliest known attempt to make a time-measuring device, how the Egyptians reckoned time, Julius Cæsar's adaptation introducing leap year and the irregular months as we now know them, the Augustan calendar changing months Quintilis and Sextilis to July and August, Constantine's calendar giving us the seven-day week, and finally the revision of Pope Gregory, the calendar we use today.

RECENT CALENDAR RESEARCH

Streamlining Time

By Ed Krauss

In Los Angeles *Times*

WHY NOT streamline the calendar, so that Johnny's birthday, if it were Tuesday, would always be celebrated on Tuesday? It could be arranged with a few slight changes.

The aggregation of historical accidents, compromises and mistakes which we call the calendar, has been in use, in its present form, for 357 years, and that is a long time for any human institution to stay unchanged! Too long, say the experts, who have organized an association to streamline it.

There is no really good reason, they point out, why a world which has modernized and transformed all its other activities, should put up any longer with a calendar which embodies the archaic ideas of Julius Caesar and his horse-and-chariot age, with only a couple of minor changes since his time.

What the world needs is a calendar that statisticians can use as a really convenient tool, without such unnecessary complications as one month of 28 or 29 days, four of 30 days, and seven of 31 days each; it needs a calendar in which the quarters are the same length, in which the length of months can be remembered without repeating a silly nursery rhyme, in which the days of the week will stay put. It needs a calendar which does not have to be reprinted and renewed every year.

Such a calendar is the proposal of The World Calendar Association. What's in the way? Nothing but custom, habit and inertia. We put up with our present calendar as a man learns to put up with rheumatic joints—but if he could get a sure cure he would be a fool not to take it.

There is no particular novelty about reforming the calendar; it has, in fact, been done several times. The ancient world got along with a makeshift lunar calendar which continually got out of line with the seasons and had to be readjusted arbitrarily at frequent intervals

Today, the idea of a "world calendar" is not just a fad. It has substantial backing. It could be put into effect by international agreement; but if some leading nation like the United States boldly put it into effect probably the world would soon follow.

With this streamlined calendar in effect, it would be practicable to memorize the calendar, and not difficult. In fact, if you had no calendar available, you could write one out by merely remembering that January 1 is always Sunday and that January, April, July and October are the months with 31 days each. To memorize the present calendar is quite a job, and a useless one, since next year you would have to forget it and learn all over again. Nor, unless you could recall on what day of the week a particular date fell, could you write out the present calendar.

All reasons for streamlining the calendar boil down to this: that the present calendar is an unnecessary complication in a world that is too complicated for comfort —so that any complication which can be got rid of will add to human ease. So let's streamline it!

Merits of Simplicity

By Prof. Bristow Adams

Cornell University

ALMOST all world movements, no matter how valuable they have been, have either failed or their acceptance has been long delayed because "time was not ripe" for them. A main problem, then, is how to ripen time. It may be fully ripened by only one process—that of education, which is generally slow and laborious.

As an educator, I have been impressed with the need of hurrying the process, of speeding education. The only way to do this is to be able to state the facts simply and understandingly, so that they may be easily grasped by the ordinary citizen, and then to disseminate them. Acceptance of new truth by the masses can be gained only in this way.

The whole question of calendar reform, to the layman, was formerly a complicated mixture of history, astronomy, legality, statistics, international politics, and economics, with a little of theology, too. My

first interest was to see whether such a problem could be presented simply and clearly: in short, I must confess that I was primarily engrossed in a question of publicity, or educational propaganda, and I tried to see whether I could make a reasonable presentation. To do that I had to make a study of proposed calendars, and soon learned the advantages and simplicities of The World Calendar, and the complexities and futilities of other proposals. Hence my interest in, and my continued advocacy of The World Calendar.

For Instance, Take 1939

By E. K. Eason

Secy. Irish Committee for Calendar Reform

NEW YEAR'S DAY in 1939 came on Sunday, so the 1939 calendar shows 12 Saturdays in the first quarter, 13 in the second, 14 in the third, and 13 in the fourth.

Take a business man who computes his financial figures in quarters, making up these totals from weekly figures, ending on Saturdays. He will be jubilant throughout 1939 at the steady increase in sales, or depressed at the rising total of expenses—until at the end he discovers that nothing of the kind has really happened: business was steady throughout the year. It was merely a calendar eccentricity that caused the variations in the quarterly figures.

How long shall we continue to put up with such an erratic calendar?

Time and the Weather

By Dr. J. Plassmann, Münster, Germany

In *Die Himmelswelt,* Berlin

METEOROLOGISTS take a very serious view of the calendar, and of proposals for its reform, because of its paramount importance in their scientific work. The fact that the shortness of February plays havoc with statistics has been illustrated by Professor Schindler.

We cannot make Nature simpler than it is, but we can undoubtedly improve our recording of its vagaries, as for instance by the correction of a single individual month with reference to the others, even though this would force us to go back and adjust the old statistics accordingly.

The proposal discussed by Schindler is one advocated long ago by Arrhenius. It includes the adjustment also of the movable holidays, on which an international agreement was almost consummated 35 years ago, but was blocked by the Czar who allowed it to die by his quiet refusal to acquiesce. At the present time the situation is again intense, and reform proposals are urged by the League of Nations.

Latest Church Views

By Abbé Chauve-Bertrand

French Roman Catholic Authority on Calendar Reform, in *Almanach du Pelerin,* Paris

OUR readers would without doubt like to know what the Holy See thinks of this matter of calendar reform. Without going back to Leo XIII, who seemed disposed to take into consideration the idea of the stabilization of Easter, nor to Pius X who encouraged the works on the subject, it will suffice to note that at present the Holy See, after having shown itself to be reserved, now follows the movement for reform of the calendar in the entire world with the greatest attention, but will make a pronouncement only when almost a unanimity or at least an imposing majority will affirm themselves in favor of one plan.

This kind of a majority seems to be approaching realization. Six nations of the two Americas have declared in favor of the 12-month equal-quarter plan, together with at least half a dozen states of Europe. The heads of the Protestant and Eastern Orthodox churches have declared their support. The question is reaching maturity.

New Calendar Committee

By G. Curcin, Belgrade, Yugoslavia

ANOTHER national calendar committee is added this month to the long list of international organizations which are promoting the revision of the present calendar. It is a Yugoslavian committee, with headquarters in Belgrade. Correspondence should be addressed to the chairman at Poenkareova 25-III.

Members of the committee are as follows: G. Curcin, chairman; Dr. Gustav Gregorin, Senator, Ljubljana; Ivan F. Lupis-Vukic, Journalist, Slit; Dragan Milicevic, Economist, Belgrade.

EXCERPTS AND REVIEWS

An Official Summary

From a Bulletin issued by the Department of Commerce, Washington, D. C., November, 1938

REFORM of the calendar, so that it may be balanced in structure, perpetual in form, and harmonious in arrangement, has long been under discussion and is now receiving serious international consideration. Fourteen governments, China, Turkey, Brazil, Chile, Peru, Greece, Hungary, Mexico, Norway, Spain, Afghanistan, Esthonia, Panama and Uruguay have indicated their willingness to accept the 12-month equal-quarter perpetual calendar known as The World Calendar.

The 12 months will be so rearranged that the new revised calendar would have a year with equal quarters in which the first month of each would have 31 days and the other two 30 days each. These quarters would synchronize the various time-units and contain exactly 91 days, 13 weeks and three months. Thirteen days of the quarter would always be Sundays, and 78 weekdays, and each month would have 26 weekdays. In this perpetual calendar there would be introduced, as the old 365th day, the Year-End Day, the last day in the year, between December 30th and January 1st, as an extra Saturday, likely to become a universal holiday as well. Then, to keep the balance properly in leap years, it is proposed that the Leap-Year Day be put in logically, as another extra Saturday, between June 30th and July 1st. Thus the calendar would be symmetrical and in keeping with the solar year and the seasons. Every January 1st would fall on a Sunday as would April 1st, July 1st and October 1st.

The shifting holidays would be stabilized. Religious and secular holidays would be fixed by their respective authorities and the way would be opened to have an agreed date to observe Easter Sunday for the Church, even as custom and authority have fixed on December 25th as the Natal Day of Christ. If that day is to be December 25th always, why not always Monday, December 25th?

The advantages to government officials, scientists, business men, educators, churchmen and statisticians of comparable quarters, months, and weeks are obvious. This form of revision is strongly urged by The World Calendar Association, International Building, New York City.

Latin-American committees were organized this year in Cuba, Venezuela, Ecuador and the Dominican Republic.

The World Calendar is sponsored by calendar reform organizations in England, France, Germany, Italy, Belgium, Canada, Chile, China, Ireland, Hungary, Greece, Switzerland, Turkey, Argentina, Bolivia, Brazil, Colombia, Costa Rica, Mexico, Panama, Peru, Spain, Uruguay.

In the United States the movement has received strong support from scientific, educational, business, religious and civic organizations.

Standard Time

By the Ottawa Correspondent of the London *Times*

STANDARD Time's sixtieth anniversary was commemorated at Toronto on November 21, when Albert Matthews, Lieutenant-Governor of Ontario, unveiled and dedicated a bronze plaque bearing the likeness of its distinguished inventor, Sir Sandford Fleming.

Fleming was a native of Kirkcaldy, in Fifeshire, where he was born in 1827. After getting a good education and some sound training as an engineer, he emigrated to Canada as a youth of 18 in 1845. Settling in Toronto, he formed a partnership with the late Sir Collingwood Schreiber, afterwards chief engineer for the Canadian Pacific Railway, and the firm, rapidly building up a reputation as the most competent and reliable civil engineers and surveyors in Ontario, prospered from the first.

In the course of his work as a builder of railways Fleming had developed a keen interest in the problem of time and given much thought to it. It was not a serious problem until railway systems of considerable length were built and news and information began to be flashed across land and sea by telegraph wires and cables.

The time given by the sundials, which were found everywhere, was good enough

for any community which need not concern itself with the affairs of its neighbors, but this local time differed from place to place, the difference increasing with distance, and in consequence operators of railways stretching across half a continent found themselves faced with great practical difficulties. Telegraph messages would often arrive (apparently) before they had been dispatched, and banks and business firms experienced considerable difficulty in completing transactions owing to complications about the time factor. So it became plain to Fleming that the most efficient utilization of railways, telegraphs, and telephones, which were just coming into use, must be frustrated by the lack of a satisfactory time system.

In 1878 he suddenly discovered what he felt was an adequate solution. He had been one of the prime movers in the foundation of the Canadian Institute, which is now known as the Royal Canadian Institute, and he decided to submit his ideas to its members in Toronto.

The proposals thus advanced in the first public presentation of a standard time system were as follows: There are 360 degrees in a circle and there are 24 hours in each day. If the 360 are divided by 24 the result is 15; and so Fleming proposed the creation of a series of 24 time belts around the globe with a width of 15 degrees each. The sanity and the practical nature of his ideas, and the vigorous lucidity with which he demonstrated their advantages to mankind, carried conviction with the members of the institute, and it was decided to bring the scheme to the attention of the Marquess of Lorne, who was then Governor-General. He was interested in scientific matters, and having examined the plan thought it of sufficient interest to submit to the British and other foreign Governments. Whitehall, however, did not see any particular merit in the scheme, and it was left to the Tsar of Russia, who sent a most encouraging reply in 1880, to initiate an international conference at Venice in 1881 for discussion of the proposals.

At this meeting many delegates were converted to the merits of the idea, but it did not find general acceptance, and a larger conference had to be held at Washington in 1884 before one by one all the civilized countries of the world accepted the scheme, France being the last to adopt it. Meanwhile, however, the railways of Canada and the United States, tired of the troubles produced by the old system, had put standard time into operation in November, 1883, and found the results completely satisfactory.

This Movable Feast

From the Birmingham (England) *Post*

REFORMS are slow in growth and that is one reason why they are less to be dreaded than revolutions. Each recurring Easter is the appropriate season for urging reform of the Julian-cum-Gregorian Calendar, and in spite of common preoccupation with political happenings that belong to the revolutionary category the advocates of what is called rational calendar reform once again are busy with efforts to concentrate attention on the social and economic advantages that would accrue from the scrapping of an antiquated provision for a floating Easter date and the establishment for all time of a fixed instead of a movable ecclesiastical feast. They have been urging their case for many years; they are urging it with special insistence this year.

The Easter of 1939 fell exactly half way between the two extreme dates on which the old reckoning makes the movable feast possible. Because of this the reformers watch anxiously the weather conditions of the moment. Good Friday's weather gave them a bull point. Sunshine and dryness, in spite of cold winds, gave conditions that delighted the average holiday seeker; continuance of like weather conditions for the next three days reinforced the argument that the fixing of the middle period of the Julian-cum-Gregorian term would be to advantage.

But there are arguments other than those associated with weather for the proposed change. Next year Easter will fall early—on March 24, within two days of the earliest possible date for Easter. Disturbing economic complications will have to be taken into account. Two Easters will fall in a single financial year, and that will involve exceptional budgeting not only in the accounts of the nation but in the trading year of all companies whose accounts are made up to March 31.

FROM THE MAIL BAG

I have exerted such influence as I have, first, in Geneva and second in the National Academy of Sciences, in the direction of the type of calendar reform for which you are working. Power to your elbow!—Dr. Robert A. Millikan, Calif. Institute of Technology.

There is no effective argument for continuance of the old calendar. There are many good reasons for adoption of The World Calendar.—J. F. Latimer, N. Y. C.

You are giving to the world peace out of age-old chaos. What a pity the world could not have had this calendar since the Christian era began.—Peahmie, Norman, Okla.

I am in favor of calendar reform and from such study as I have given to the problem, I favor the proposed World Calendar.—C. C. Johnson, Pres., Amer. Dist. Tel. Co., N. Y. C.

As a student of archaeological chronology I consider highly interesting the research work you are doing on the calendar. —Dr. Manuel Gamio, Mexico City.

I have been an unquestioning adherent of calendar reform for a number of years.—Hellmut Dibelius, Berlin.

In my opinion the Journal of Calendar Reform is growing better and more convincing all the time.—Edward F. Flynn, Great Northern Railway Co., St. Paul, Minn.

I am in complete accord with the Resolution on Calendar Reform of the N. Y. State Chamber of Commerce adopted April 4, 1935.—H. Boardman Spalding, Vice Chairman, A. G. Spalding Bros., N. Y. C.

As the works of Calendar Reform tend to make improvements on the Calendar existing, it is a question of no minor importance and will receive warm attention from peoples of different parts of the world.—Chou Lou, Pres., Natl. Sun Yat-Sen Univ., China.

Senator Justin Godart's summation of the advantages of The World Calendar is as convincing as any I have read.—A. L. Babcock, St. Petersburg, Fla.

We are frequently using material urging calendar reform and support The World Calendar editorially.—W. W. Canfield, Editor, Observer Dispatch, Utica, N. Y.

My preferences are for The World Calendar of 12 months. Outside its undeniable economic advantages, the reform of the calendar has a high educational value. It recalls to man his true position on earth and the relative value of the blessings imposed. If error can prevail for centuries, even for millions of years, truth comes through in triumph.—Prof. J. Drach, Sorbonne, Paris.

I constantly advocate such a system among my colleagues.—M. Vercammen, Journalist, Lierre, Belgium.

As manager of a Department in the Chamber of Commerce of the United States, I became very much interested in calendar reform and believe strongly in it.—H. P. Baker, Pres., Mass. State College, Amherst, Mass.

Your cause of calendar reform has got to win because there isn't a sensible argument against it. It is astonishing that a great body like the legal profession should be so backward in studying the movement which holds within it promise of benefit to people in every line of activity.—Caleb Harding, Counsellor-at-Law, New York City.

As a former member of the Board of Directors of the United States Chamber of Commerce, also a member of its committee on the study of calendar reform, I am deeply interested in this.—W. Candler, Mgr., Atlanta Biltmore Hotel.

I wish to thank you for the privilege of getting from your publication information that has given me a different viewpoint. Before becoming acquainted with this plan, I thought the 13 months of four weeks each was the best way out.—C. F. Moore, Pres., Moore's College, Racine, Wis.

I shall be much obliged if you can write me all details on this Calendar, and what I should do for it.—Koinange wa M'biyu, Chief, Kiambu, East Africa.

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Membership is based on active interest in the study of adequate and effective improvement of the calendar. Owing to lack of space, a large number of names have been omitted. They will be printed in future issues.

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Errata—Footnote on page 80 should read: "See P. W. Wilson, Discussion of Leap Week, Journal of Calendar Reform, March, 1935, page 18."

EDITORIAL PARAGRAPHS

If we could only get the calendar on a common-sense basis! — New York *Daily News.*

If The World Calendar Association has its way, we will soon be living under a sixth calendar, whose quarters have equal lengths and whose holidays do not shift from year to year, as does Easter.—Baltimore *Sun.*

Calendar reform would stabilize national holidays in Canada to either Friday, Saturday or Monday every year.—Toronto *Hardware & Metal.*

The World Calendar Association favors another change now, to make each date fall on the same week-day every year and make the year divisible into four equal quarters.—Buffalo (N. Y.) *Times.*

Under this improved calendar we would celebrate the day and the date, because these would not vary from year to year.—Danbury (Conn.) *News-Times.*

The World Calendar has the advantage over any other proposed revision of enabling us to keep the dates which we have without material change. — Los Angeles *Griffith Observer.*

Calendar reform is more advanced than is generally realized.—Springfield (Mass.) *Republican.*

Many organizations all over the world are giving this movement their cooperation and approval; it is hoped that five years from now the trick can be turned.—Asheville (N. C.) *Citizen.*

The World Calendar deserves study by those who believe that a more balanced and harmonious method of dividing time would benefit the world.—Newport (R. I.) *News.*

The World Calendar has met with a great deal of favor where presented, because a much better business system would result from its use. — Phoenix (Ariz.) *Arizona Republic.*

When one stops to think of it, one of the most amazing things about our marvelous age is the fact that we are willing to stumble along using the same patched-up, complicated, makeshift calendar that was devised by astronomers under Pope Gregory XIII. — Columbus (Ohio) *Dispatch.*

Astronomers have been advocating reform of the calendar for generations.—Atlanta *Constitution.*

Modern living takes more leisure into account than living a generation ago. The double holiday idea would fit the tempo of modern life. Thoughtful men will not sneer at calendar reform enthusiasts.—Peoria (Ill.) *Journal Transcript.*

The World Calendar may be the model for our revised calendar before you know it.—Waterbury (Conn.) *Democrat.*

There isn't any good reason why the calendar should not be "reformed." — Joplin (Mo.) *Globe.*

Reform of the calendar gains ground day by day in international opinion.—Santiago (Chile) *El Imparcial.*

With the calendar at present in use, holidays are so variable and frequently so inconveniently placed, that they fail to provide opportunities for recreation, which would otherwise be the case were the statutory holidays set permanently on Mondays.—Drumheller (Canada) *Mail.*

The World Calendar was studied out and recommended by leading astronomers and approved by prominent churchmen, statesmen and business men, and needs only to be understood and adopted by the masses to go into effect. — Blackfoot (Idaho) *Daily Bulletin.*

Adoption of The World Calendar would give a definite time and date to every holiday and remove the obvious complications of our present Gregorian time cycle.—Chatham (Canada) *Commercial.*

As intelligent citizens we should do our part to secure action *now.* Write your senators and congressmen urging national action.—Wayland (Mass.) *Chronicle.*

Some of the most enthusiastic propagandists are those who believe in calendar reform.—Paulding (Ohio) *Democrat.*



After reading please pass on to others

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Journal of CALENDAR REFORM

THIRD QUARTER

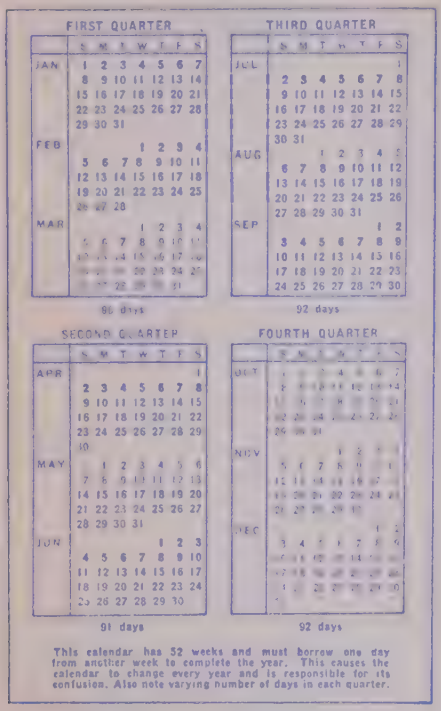
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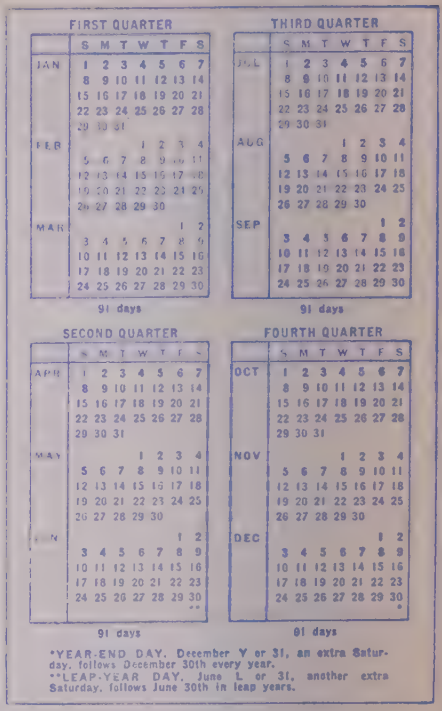
1939

PRESENT GREGORIAN CALENDAR

PROPOSED WORLD CALENDAR

In 1939 both calendars begin the year with Sunday, January 1st.





EACH YEAR DIFFERENT

This calendar is always different from year to year.

The quarters are unequal in length.

Each quarter begins and ends on a different day of the week.

Each month begins and ends on a different weekday.

The months have a varying number of weekdays.

Each year begins on a different weekday.

This calendar is unbalanced in structure, unstable in form, and irregular in arrangement.

SOON YOU WILL BE DISCARDING THIS OBSOLETE CALENDAR.

EACH YEAR THE SAME

This calendar bears no year-date and is good for every year.

The quarters are equal in length.

Each quarter begins on Sunday and ends on Saturday, contains 3 months—13 weeks—91 days.

Month-dates always fall on the same weekdays. Each month has 26 weekdays—plus Sundays.

Each year begins on Sunday.

Year-End Day and Leap-Year Day are international holidays.

This revised calendar is balanced in structure, perpetual in form, harmonious in arrangement.

SOON YOU WILL BE USING THIS UP-TO-DATE CALENDAR.

LET US ENCOMPASS THE EARTH WITH A NEW ORDER OF TIME

VOL. IX THIRD QUARTER 1939 No. 3

PRESIDENT ROOSEVELT'S appeal to foreign states to continue participation in the New York World's Fair for another year is significant. It is important and of far-reaching value in that their acceptances will clearly demonstrate that cooperation economically and culturally is possible even in the midst of armed conflict.

There is a close analogy to this and the efforts of The World Calendar Association toward a new calendar. Both the World's Fair and the activities of the Association are labors for a more harmonious understanding and greater friendship among peoples and nations.

Recently an army reserve officer cited statistics showing that in all the 3521 years of recorded history only 368 were years of peace! Yet notwithstanding the preponderance of war-years, the world has made great progress in science, the arts, education and industry.

The advance which has been made by The World Calendar is notable indeed and stands as concrete evidence of closer cooperation among nations. Already 14 countries have agreed upon it. This is a sound beginning toward an achievement that is above national feeling, political bias or special group interest. It is a constructive force as contrasted to the destructive forces now so unhappily prevalent throughout the world.

It is noteworthy that both China and Spain gave official approval to The World Calendar while torn with war. A movement so far-reaching in its direct bearing on order and stability must spur our efforts to go ever forward with unabated faith and courage to the achievement of our goal—whether in peacetimes or in war-days.

By adopting deliberately, sincerely and confidently a harmonious arrangement of time, according to The World Calendar, our generation will go far toward inviting greater agreement among nations, thereby encouraging the return of peace and understanding.

THE EDITORS.

Journal of
CALENDAR REFORM

July, August, September
1939

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FOREIGN TRADE VIEWPOINTS

By Clifford W. Smith

General Foreign Manager Electrical Research Products, Inc.

THE calendar is one of the important mechanisms of every-day life. How important it is we only dimly realize because it has always been there; only if it were eliminated and we were obliged to go back to reckoning the passage of time by the sun and the moon would we become aware of the convenience of this instrument. Business would snarl and go into chaos and dates would become immensely valuable and be sold, as once they were in Roman days.

As a mechanism, the calendar ranks with transportation and communication in its capacity to facilitate the activities of human beings in daily life. Along with the chronometer, it is the chief time-reckoning device we have at our disposal. As a universal convenience, it can be classed with the radio, telephone, typewriter, automobile and motion picture.

One of the characteristics of such every-day conveniences is that, as they are being used, they are constantly being modernized or improved. The wider their use, the more rapid and fundamental their advance towards perfection. The world is their proving ground. A simpler, more efficient, more uniform operation is required of all mechanical aids in this modern era; hence, the movement for calendar reform. Its ultimate success is as necessary and as inevitable as the appearance in the sky of the fool-proof airplane, one which will render accidents impossible.

The history of calendar reform is the best proof. Far from being a novelty or the proposal of "reformers" or misguided zealots, it is simply the latest practical step in a long series of evolutionary strides taken by calendar builders since the days of ancient Egypt, covering a period of more than sixty centuries.

The World Calendar represents that reform of the existing calendar which appeals most widely to interests of all classes of society the world over. It is a Twentieth-Century movement with a motive and an aim wholly enlightened and based on sound historical precedent. Of all the proposals for reform this one attracts the businessman because of its relative simplicity.

Should international business men and world traders be concerned with calendar reform?

An unqualified affirmative can be the only reply to such a question. An improved calendar is, of course, of broad general interest; but in the narrower sense of foreign commerce, I might say that anything which the world at large sponsors, anything which is a matter of international con-

cern and cooperation, constitutes a movement which has benefits for those engaged in the sale of merchandise abroad.

It can be argued, without overwhelming opposition, that all international movements, conventions, conferences, or gatherings for the purpose of solving a world problem, have within them elements that redound to the well-being of trade relations. Each such effort tends to promote closer interest and solidarity and more extensive financial, social and industrial intercourse. This reasoning can be applied to such varied world meetings as the Olympic Games, the Eucharistic Congresses, Red Cross meetings, and Chamber of Commerce conventions.

In this category lies calendar reform; for this is a movement which brings nations together on a common ground over which there can be no military display, nor deep-seated hostility of any kind. It provides an arena for friendly discussion, and one in which good-will of far-reaching consequences can be developed and fostered.

But, there are many specific, every-day, practical advantages inherent in The World Calendar. The American Statistical Association and other commercial organizations have made it clear that the keeping of records would profit enormously by the proposed change. Dates would be regularized and comparisons of production and sales figures would, under a fixed calendar, become accurate to the day. In small businesses, the difference of a day or two does not matter a great deal perhaps, but in large corporations, doing a large volume, and having records that go back several decades, the importance of precise records cannot be exaggerated.

Once The World Calendar is adopted generally the inconvenience of adjustments to business statistics, made necessary by the varied number of working days in a given month or quarter, will be eradicated. This major improvement will itself obviate certain discrepancies in compilation and comparisons—particularly those which are constantly in use by traders and governments in making international business and industrial reports. The archives of business—domestic and foreign—will attain a desirable state of stability that will most effectively serve the immediate interests of everybody involved.

In our own type of specialized foreign trade—the sale of motion picture equipment and other auditory devices—these advantages would be at once apparent. Our business, however, being more or less irregular, would not profit to the degree of other traders who move merchandise continuously in virtually unvarying volume through the year. They would profit by the simplification of schedules, sailing dates, deadlines and so on.

Obviously, the reform is desirable now—right now. For business men, the sooner the better! In the world at large, it will not eliminate that disparity between nations resulting from special national holidays; but even these, so numerous in some countries, will not detract from the advan-

tages to be gained from a standardized calendar, since it constitutes in the main a convenient arrangement of the days, weeks and months. Year-End Day and Leap-Year Day will become truly international occasions—opportunities for the world at large to join in a day of leisure and solemn observance that will some day have the effect of producing a world union of nations in which war as an instrument will be totally barred.

In ordinary every-day life we accept the calendar without giving it a great deal of thought. There it hangs on the wall or on our desk to be looked at when we begin dictating or writing checks or noting anniversaries or paying bills. Like the heart within our bodies, that would bring death if it ceased to function, we pay it no heed. And like the heart, it is a symbol—the one of love or courage, the calendar, of time.

If there is one area in which all peoples can meet and commune, it is time. Whatever their racial or territorial divergence, all tribes and nations have a day and a darkness, a parade of the seasons, a sowing and a reaping, work and sleep, youth, old age and death. Time, rather than death, is the great leveler, the great common denominator, and the visible representation of time is that innocuous table of numbers—the calendar.

One calendar for all peoples, a simplified calendar that could be carved or chiseled into the walls of houses and never require changing, remembered rather than consulted, would mean a step towards the goal of a true international good-will. It would be a step towards one language, one system of laws guaranteeing men, women and children the right to social and economic freedom. For, the calendar is a unifier, a method of communication.

Between nations, the ordinary methods of communication improve daily. The clipper ships now ply the oceans in matter-of-fact fashion. We telephone London or Melbourne and give it no second thought; we telephone from our offices, from ships at sea. The dream of a car in every garage becomes more feasible with each advance in chemical, mineralogical and industrial science. In a word, the world narrows. There is every reason for speeding up the process of standardization that would make trade and social and scientific relationships among countries easier. Not only language, but the radio, the system of weights and measures, monetary methods, and all other factors that play a part in world affairs, could be developed so that there would be one system for the world.

The acceptance of The World Calendar will come first, must come first, for it is a stride towards enlightened internationalism, one upon which business men, diplomats, churchmen and educators can agree. And once the calendar is accepted—this calendar—the other barriers must fall, the walls of bigotry, selfishness and misunderstanding that stand between our present-day world shuddering under a constant threat of war and the world that is to be, the serene and pacific world of tomorrow.

CHANGE IN THANKSGIVING DAY

By ELISABETH ACHELIS

President, The World Calendar Association

(See press excerpts on page 155 and on inside back cover.)

ON Monday, August 14, the President announced, at an informal press conference, that he intended to proclaim November 23 (the fourth Thursday), instead of the customary last Thursday (November 30)* for the 1939 Thanksgiving. He had been urged by business and trade to take this step, as it is customary to consider that the period for the Christmas holiday buying begins immediately after the Thanksgiving Day holiday. When there is a late Thanksgiving Day, as in this year, it falls on a fifth Thursday in the month, the holiday-buying-period is shortened with resultant hardships on business and trade.

A difficulty frequently encountered in the adoption of change is the reluctance to accept anything that breaks with long-standing tradition. A test of this reluctance is now being provided by President Roosevelt's action in advancing by one week the traditional date of the American Thanksgiving Day observance.

It is highly significant and encouraging, particularly from the viewpoint of calendar reform, that the power of tradition is not manifesting itself as a serious factor in the public reaction to the President's announcement. Most of the more emphatic objections came from those who had already scheduled annual events on the traditional date this autumn, and found themselves unable to shift their schedules—without encountering difficulty and financial loss.

The suddenness of the President's action, as well as this departure from a custom dating from 1863, was startling enough to provoke widespread comment. Newspapers throughout the country discussed it for several days. Editorial comment was, in general, approving—although some political opponents of the President made an effort to capitalize his action. However, the general public regarded the change as a reasonable one in which political motives should not enter. The World Calendar Association also fully endorsed the President's proposal.

Many state Governors are indicating that they will proclaim the Thanksgiving date designated by the President. Those who will use the old date this year are motivated not so much by tradition and custom as by the

*From the *New York Times:* "The President said that in the last six years many persons . . . had urged him to shift the annual feast day from the traditional last Thursday of November to some earlier date. . . . Because the last Thursday of the month occurred this year on November 30, he had decided to grant the request. The President emphasized that the day of thanksgiving was not a national holiday and that there was nothing sacred about the date, as it was only since the Civil War that the last Thursday of November was chosen for observance."

great inconvenience and difficulty the late announcement caused the people. Here is clear demonstration that reasonable change is welcome by the American public, a hopeful sign for acceptance of the equally reasonable World Calendar.

To meet criticism of this year's brief notice and to placate advance-planners and calendar-makers who had presented their grievances, President Roosevelt a few days later announced that he also intended to change the date for the 1940 observance. He will place Thanksgiving in 1940 on the "next to the last Thursday in November"—in other words, on the *third* Thursday in the month—November 21.

Now, the change for 1939 was due entirely to the fact that November contained *five Thursdays*. But this situation does not occur in 1940. The President could have carried out the spirit of his first proposal had he stated a policy to set Thanksgiving Day always on the *fourth* Thursday of November, which this year is November 23. Thus the change from the traditional "last Thursday" would occur only in years when November has five Thursdays and a certain stability would have been gained.

It is believed that this situation may be made clear to him by his advisers. Certainly the most suitable date for Thanksgiving Day is midway between Election Day and Christmas. There is another disadvantage to the President's suggestion for the "next to the last Thursday in November." It brings Thanksgiving much too close to Armistice Day when there are but four Thursdays in November, and Armistice Day is the one legally established "national holiday" in the United States. It was legalized by President Roosevelt in May, 1938. All other holidays are dependent on state legislation or custom for their authority, including Thanksgiving when governors generally follow the Presidential proclamation. Should this new "next to the last Thursday in November" be continued, the three November holidays would crowd too closely and the still fluctuating position of Thanksgiving would by no means be an advantage.

The President might well nominate a small committee to study the various holidays observed in the United States, with a view to considering whether any of them should be adjusted for the greater benefit of the public. However, in this connection, it is important to bear in mind the ease with which stabilization is achieved in the perpetual World Calendar.

The historical basis for the American Thanksgiving observance is decidedly revealing. It goes back to early colonial times, although the present custom of Thursday observance dates only from 1863. Prior to that time, Thanksgiving was always a movable feast. The early Pilgrims, the Colonies, the States during the Revolutionary War and up to Lincoln's 1863 proclamation, observed the feast-day on different days of the week, in dif-

EDITOR'S NOTE: The third Thursday in November can fall on the 15th, 16th, 17th, 18th, 19th, 20th or 21st, while the fourth Thursday may occur on the 22d, 23d, 24th, 25th, 26th, 27th or 28th.

ferent months and in intermittent years. Abraham Lincoln gave the holiday a semblance of stability when for the last two years of his administration he selected the last Thursday in November (which was also the fourth Thursday) for its observance. Thus he nationalized Thanksgiving Day.

History tells us that a Thanksgiving service was held on December 9, 1620—a Saturday*—by the Pilgrims, who gave "God thanks for his mercies, in their manifold deliverances." A year later, upon the arrival of the ship, "Fortune," Friday, November 9, 1621, the Governor of Plymouth, William Bradford, proclaimed the first Thanksgiving in gratitude that their first harvest had proved so bountiful—"had all things in good plenty." There was also rejoicing in that new settlers were joining the survivors of the original Pilgrims and thus were increasing and strengthening the little colony. Incidentally, on this occasion four men were sent out by the Governor to search for game, and these soon returned with a plentiful supply of fowl. Since most of these were the native turkey it is natural that the turkey has ever since reigned supreme at our Thanksgiving feast.

The next recorded observance was in midsummer. On Wednesday, July 30, 1623, the Pilgrims celebrated the arrival of a long-awaited ship bringing much-needed food from Holland. Observances were also held at Plymouth in 1633 and 1651. Then 17 years appear to have passed before another Thanksgiving Day was observed (on Wednesday, November 25, 1668), and then we do not hear of it again until 1680 and 1690. In the neighboring Massachusetts Bay Colony, Governor Winthrop in 1631 appointed a Tuesday, February 22, as a Thanksgiving Day—a date, interestingly enough, which we now observe as Washington's birthday!

In Connecticut the first Thanksgiving was held in 1639, then repeated in 1644 and 1649. After the latter date it became an annual custom. There are those who claim that Connecticut thus kept Thanksgiving alive for us. In New Jersey the General Assembly of 1676 named the second Wednesday in November as a day of Thanksgiving. Thus it is evident that while the early Colonists did observe Thanksgiving Day, they did so irregularly.

Benjamin Franklin has left us some interesting remarks concerning the tradition of Thanksgiving observance. He wrote** that at an assembly of the early Pilgrims it was characteristically felt that a day of fasting and prayer should be given the Lord. But a farmer of true Yankee "plain sense" arose and declared that he thought it "more becoming the gratitude they owed to the Divine Being, if, instead of a fast, they should proclaim a Thanksgiving." His advice was taken, and from that day to this the observance became one of thanksgiving—a national holiday of which America is justly proud.

*Old style Julian dates are used hereafter.

**Richardson's *American School Reader* for 1810.

It took the Revolutionary War to make state and local observances more or less national. A national Thanksgiving day was annually recommended by the Continental Congress, yet after the peace of 1784* the custom lay dormant until 1789, when Washington ordered a day of thanks in gratitude for the adoption of a Constitution. During the Revolutionary War, Congress designated the following dates for Thanksgiving observances, although the first two dates were rather in the nature of a fast than a feast-day:

Thursday,	July 20,	1775
Friday,	May 17,	1776
Thursday,	Dec. 18,	1777
Wednesday,	April 22,	1778
Thursday,	May 6,	1779
Wednesday,	April 6,	1780
Thursday,	May 3,	1781
Thursday,	April 25,	1782

With but one exception the Continental Congress took a recess on these days. General George Washington, as Commander of the Continental Army, issued a special proclamation for a general Thanksgiving Day at Valley Forge on Wednesday, May 7, 1778. Here is definite historical evidence that Thanksgiving Days wandered within the week, among the months and at random through the years.

In 1789 Representative Elias Boudinot of New Jersey recommended in Congress "a day of thanksgiving and prayer to be observed by the people of the United States in acknowledgment of the favors of the Almighty God and especially His affording them the opportunity peaceably to establish a constitution of government for their safety and happiness." This resulted in the first Presidential Thanksgiving Day proclamation and Washington named Thursday, November 26, 1789 (fourth Thursday), for its observance. His proclamation opens: "This day is devoted by the people to the service of that great and glorious Being Who is the beneficent Author of all the good that was, that is, or that will be; that we may all unite in rendering unto Him our sincere and humble thanks for His kind care and protection of the people of this country." It concludes with the following: "To render our National Government a blessing to all the people by constantly being a Government of wise, just, and constitutional laws, discreetly and faithfully executed and obeyed; to protect and guide all sovereigns and nations and to bless them with peace and concord; to promote the knowledge and practice of true religion and virtue, and the increase of science; and, generally, to grant unto all mankind such a degree of temporal prosperity as He alone knows to be best."

The next Thanksgiving proclamation by President Washington did not

* New Style Gregorian dates used hereafter.

come until 1795, six years later, on the occasion of the successful suppression of the Whiskey Rebellion. During the administrations of succeeding Presidents, Thanksgiving Days were observed irregularly, but on all occasions the decision to observe these days was left to State governors. In April, 1815, President Madison by request of Congress appointed a national Thanksgiving of Peace to mark the end of a second war with England. By 1830 the Governors of New York were naming Thanksgiving Days annually, and soon the other Northern States fell into line.

In the South, Thanksgiving was practically unknown until Governor Jones of Virginia in 1855 requested the State legislature to observe the day. His suggestion did not receive general acceptance, however, until two years later, when his successor, Henry A. Wise, issued a Thanksgiving proclamation. This precedent was soon followed by eight other Southern States, but the custom lapsed after the outbreak of the Civil War in the South, as well as in some of the Northern States.

National revival of the holiday was due to the activities of Sarah Josepha Hale, editor of a popular woman's magazine called "Godey's Lady's Book." From 1827 onward she had been untiring in her efforts to stimulate interest and public desire for a nation-wide Thanksgiving Day to be celebrated on the *same day every year* and to fix the *last* Thursday in November for its annual observance.

In her last editorial on the subject in 1863, she emphasized the salutary effect of appointed times for national reunions which combine religious sentiment with domestic and social enjoyment. She also urged the great advantage socially, nationally, religiously, of having the day of our American Thanksgiving *positively settled* and of putting aside sectional feelings and local factors. "Would it not be more noble," she wrote, "more truly American, to become national in unity when we offer to God our tribute of joy and gratitude for the blessings of the year?" She pleaded for a Presidental proclamation appointing a regular day of Thanksgiving for the people of the United States and suggested November 26.

But why did she select November 26, the last Thursday in November? May it not have been due to the fact that the last (and fourth) Thursday of November that year coincided in date with the first proclamation by President Washington in 1789?

Mrs. Hale's editorial gained the sympathetic ear of President Lincoln. On October 3, 1863, he issued his first national Thanksgiving proclamation: "to set apart and observe the last Thursday of November next as a day of Thanksgiving and praise to our beneficent Father Who dwelleth in the heavens." This was November 26—a fourth Thursday. The next year, on October 20, 1864, followed his second proclamation: "I hereby appoint and set apart the last Thursday in November next as a day which I desire to be observed by all my fellow citizens, wherever they may then

be, as a day of thanksgiving and praise to Almighty God, the beneficent Creator and Ruler of the Universe." This was Thursday, November 24—another fourth Thursday. These two proclamations formed the precedent for succeeding presidents to proclaim annually the *last* Thursday rather than the fourth Thursday in November as the national day of thanksgiving.*

The phraseology "the last Thursday in November" was unfortunate—due to the fact that probably neither Mrs. Hale nor President Lincoln nor anyone else realized the annoying defect in the Gregorian calendar, by which November could have either four or five Thursdays. Mrs. Hale's desire to have the holiday *positively settled* could therefore *not* be fully realized. It is the weakness of the "last Thursday" or "next to the last Thursday" or any such vague designation that should be removed from our Thanksgiving Day so that it can occur actually on a definite day.

Now that a courageous President has made a beginning at correcting this troublesome situation, there is an opening for a still more desirable change—namely, a transfer of Thanksgiving Day to *Monday.*

A Monday (instead of Thursday) for the Thanksgiving Day observance has real advantages. And in view of the historical background of the festival, there is no sacrosanct tradition for the Thursday date. It is pertinent to recall the words of Professor Albert L. Guerard, of Stanford University: "America is a country that looks forward instead of backward—a country whose ideals are principles instead of traditions . . . The dead hand of the past should be of the past and if we could but conjure away the incubus of historical traditions, peace would be at hand."**

Designation of the *fourth Monday* in November for the annual Thanksgiving Day observance would have the following advantages:

1. It spaces the holidays within a period of seven weeks more or less evenly throughout November and December. It falls approximately three weeks after Election Day and four weeks before Christmas.

2. Being a Monday, it avoids an awkward break in the week which interferes with the smooth flow of business and education.

3. "Domestic and social enjoyment" would be enhanced in combining it with Saturday and Sunday, rather than isolating it between two working days.

4. The long week-end would allow members of families living at distances to gather around the festive board.

5. To churches the fourth Monday would be a signal for the ending of Trinity Sundays and the beginning of Advent Sundays which announce the coming Christmas season.

6. It would be the fourth Monday in either the present Gregorian or

*These in brief are representative dates, as there is no space in this article for enumerating all the dates on which thanks were offered.

**_Think_, July, 1937.

the proposed World Calendar without any loss of the above-mentioned advantages.

In connection with a Monday Thanksgiving, it has been objected that a feast-day on Monday would be an unnecessary hardship for women since they must prepare for it on the preceding Saturday, a half-holiday. But every housewife is first of all a woman and it is doubtful whether she would long weigh the necessity of a little planning aforehand against the benefit to the public or the joy of having members of her family with her, no matter from what distances they might have to come. With a Monday Thanksgiving, families would have ample time to assemble for the feast, for it now takes approximately 18 hours for an airplane to cross from coast to coast.

Advocates of The World Calendar hope to introduce the new order of time—the perpetual World Calendar—by December 31, 1944, and the advisability of placing all holidays on Monday will then of course be greatly helped and reinforced. The wandering character of our national holidays in the very nature of things cannot be completely solved in our present variable calendar.

In discussions for Monday holidays, emphasis and recognition should clearly be given to the differences between holidays having a *month-date* and those whose observances are *not* so restricted. Holidays like February 12 and 22, July 4, October 12, and December 25 should remain where they fall in the present calendar. Any change to a Monday would but increase the confusion already existing and associations with their origin would be lost. But among the important *non-dated* holidays, not so restricted, Memorial Day, Labor Day, Election Day, and Thanksgiving Day, there exists no valid reason why these could not be celebrated on Monday. Labor Day, already a Monday, has long been widely acclaimed because of this very advantage. Similar observance of Memorial Day and Thanksgiving Day on Mondays should bring the same benefits to the American people. We include Memorial Day (May 30) in this list as the date is one arbitrarily chosen with no apparent historical basis.

As for Election Day, placing it on a Monday should prove of advantage to the voting citizens. Campaign speeches and activities could be concluded Saturday night, and the restful Sunday following would afford citizens a quiet day to weigh the issues in question, thereby better preparing them for casting their ballot on the next day, Monday.

As already mentioned, holidays with *specific-date-associations* cannot well be placed on Mondays in our present calendar because their dates would constantly change and wander through a bewildering cycle. Only in a new perpetual World Calendar, stabilized and ordered in arrangement, can these uncertainties and vagaries in our holidays be removed. All holidays under The World Calendar—those with month-dates and

non-dated holidays—can find their rightful place in the week and month, and on a definite date. Toward this goal the Fourth-Monday-Thanksgiving would undoubtedly lead the way. Our Thanksgiving would at long last be *positively settled* as Mrs. Hale so ardently advocated.

It is highly regrettable that this year's observance of Thanksgiving is marred by division thereby preventing a united observance of this characteristic American holiday. Whether or not we agree with our President's selection of the "next to the last Thursday" this year and in 1940, we shall extend to him our support, remembering Mrs. Hale's inspiring words that it is "more noble, more truly American, to become national in unity when we offer to God our tribute of joy and gratitude for the blessings of the year." This does not preclude, however, our use of influence and effort toward a better arrangement of Thanksgiving Day for subsequent years.

This year of 1939 is so heavy with sorrow and tribulation in many parts of the world because of armed conflict, that it would have been more desirable than ever before for Americans in their Thanksgiving to have been united in a national indivisibility. For in unity we can best raise our own thanks and add to them a prayer for our less fortunate brethren.

OBITUARY NOTES

PROF. E. R. A. SELIGMAN, teacher, adviser to governments and dean of American economists, died July 18 at the age of 79. He was very much interested in the calendar reform movement and urged the United States Government to take the initiative in calling an international convention to consider the subject.

DR. GRACE ABBOTT, of the University of Chicago, former chief of the United States Children's Bureau, died in Chicago, June 19. Miss Abbott had long been interested in calendar reform, having joined the Association on March 29, 1931.

REAR ADMIRAL WALTER R. GHERARDI, U. S. N., in charge of American troop transportation during the World War, died in Washington on July 24. Admiral Gherardi's interest in calendar revision centered around his work at the Hydrographic Office at the Navy Department. He believed revision would be an aid to navigation.

DR. E. KIDSON, distinguished New Zealand meteorologist, died on June 12. He was actively interested in calendar reform and had just been appointed to the Calendar Committee of the Australian and New Zealand Association for the Advancement of Science.

PROF. AUGUST ENNA, one of the best known composers in Denmark, died in Copenhagen on August 3, at the age of 80. He joined The World Calendar Association early in 1936.

OTHER deaths among the membership of The World Calendar Association include: *Mrs. William Gorham Rice,* former President of the Albany branch of the League of Nations Association; *The Rev. Dr. Edwin M. Randall,* clergyman, Vashon, Wash.; *C. B. Murray,* chemist, Cleveland; *Clark T. Norris,* book dealer, Zanesville, Ohio; *Roger D. Smith,* transportation expert, Louisville and Nashville Railroad, Corbin, Ky.; *Daniel W. Hering,* curator, James Arthur Collection of Clocks and Watches, New York University; *Mrs. O. H. Miller,* State Secretary, Parent-Teachers Assn., Fort Myers, Fla.

REPORT ON WOMEN'S STUDIES

By Mrs. Rowland H. Latham

Chairman of the Calendar Reform Committee of the General Federation of Women's Clubs

AT A session of the Executive Committee of the General Federation of Women's Clubs, prior to the 1937 Council in Tulsa, Oklahoma, the President, Mrs. Roberta Campbell Lawson, presented a request from The World Calendar Association asking the Federation to extend its cooperation in the matter of calendar reform. After some discussion, the question was referred to Mrs. Rowland H. Latham, of Asheville, North Carolina, for investigation.

Mrs. Latham had long been interested in calendar reform and in the model proposed by The World Calendar in particular. With the feeling that an organization of the size and importance of the General Federation of Women's Clubs should give serious consideration to this question, she made a favorable report to Mrs. Lawson and during the summer of 1937 was appointed Chairman of Calendar Reform for the Federation.

At the beginning of the club year, 1937-38, letters were sent to the Presidents of all State Federations, Alaska, and the District of Columbia, asking their cooperation in launching the study of calendar reform among the club women of their respective states by the appointment of State Chairmen of Calendar Reform. As a result, Chairmen were appointed in the following Federations: Alabama, Arizona, Arkansas, California, Colorado, District of Columbia, Florida, Illinois, Iowa, Kansas, Maine, Massachusetts, Minnesota, Missouri, Montana, Nebraska, New Mexico, North Carolina, North Dakota, Oklahoma, Pennsylvania, South Carolina, Utah, Vermont, Wisconsin and Wyoming.

These Chairmen proceeded to urge individual clubs in their Federations to present one program during the year on calendar reform. Background material for this purpose was supplied on request. To the Presidents of State Federations having no official chairman, a similar suggestion was made. The result of these letters was a real demonstration of interest in calendar reform, and in many cases a detailed study of the merits of The World Calendar.

At a meeting of the Board of Directors of the General Federation of Women's Clubs held in Washington in January, 1938, Miss Elisabeth Achelis, President of The World Calendar Association, was invited to speak and made an address on the subject, "Being on the Square with Time." Through this presentation, further interest was stimulated among Federation leaders and the remainder of the club year of 1937-38 saw increased activity among clubs in many states. Because many clubs had

completed their programs before the calendar study was begun, the project was continued through the club year 1938-39. Constantly increasing interest was noted among clubs scattered over the entire nation.

Official reports were given at the Kansas City Triennial of the General Federation in 1938 and at the January Board Meeting in 1939 by the Chairman of Calendar Reform of the General Federation.

At the 1938 Triennial, Dr. Clara B. Burdette, in her report as Chairman of Historical and Continuation Committee, gave the adoption of The World Calendar as one of her four objectives for the Federation. She said: "Under the committee appointed to bring information concerning the proposed World Calendar, you have already been presented with the facts concerning waste of time, efficiency, commercial cost and mental reckoning, that could be eliminated by the acceptance of this reform, and we emphasize its importance."

During the two years of this study of calendar reform numerous letters have come from various sections of the country from club women giving their reasons for favoring adoption of The World Calendar. In many cases, they have brought up new arguments of real interest. A Department Chairman in a Southern State wrote: "Having Christmas Day always on Monday appeals strongly to me because it gives the churches an opportunity to present beautiful musical programs on Christmas Eve, Sunday—the proper day, since Christmas is a religious festival."

From the West a State President said: "What a boon to workers who are victims of the Christmas rush it will be to have Christmas Eve on Sunday—a day of rest. In this way they can really enjoy Christmas Day instead of sleeping through it, as many now do." A mother from New England added: "It will be a source of real satisfaction if the calendar can be stabilized, for my family is peculiarly sensitive to the upsets of wandering holidays." To a club woman in the deep South a fixed Easter will be the greatest benefit of the new calendar, for hunting up the date of Easter each year has always irked her, she says. And so from representative women throughout the United States have come expressions of approval of The World Calendar too numerous to mention here.

It was in response to requests from some of these women that a resolution was presented and passed at the 1939 Council in May at San Francisco. The resolution was as follows:

"WHEREAS, It is generally recognized that the present calendar could be replaced by one more suited to the needs of our modern day and age, thus effecting an economy in time, cost and energy; and WHEREAS, The members of the General Federation of Women's Clubs have given this subject their careful study and consideration, therefore be it

"RESOLVED, That the General Federation of Women's Clubs in Council assembled at San Francisco, May, 1939, endorse calendar reform on the perpetual twelve month plan of equal quarters, known as THE WORLD CALENDAR, and be it further RESOLVED, That the United States Government be requested to cooperate with other

Governments in bringing about Calendar Reform with a view to making THE WORLD CALENDAR internationally operative, whenever the time for such cooperation is deemed proper by Governmental authorities." (Presented by Mrs. Rowland H. Latham, Chairman, Committee on Calendar Reform; approved by Mrs. Frederic Beggs, Chairman, Department of International Relations, Mrs. Gustav Ketterer, Chairman, Department of Legislation, and Mrs. F. H. Clausen, Chairman, Department of American Citizenship.)

Mrs. Saidie Orr Dunbar, who was elected President of the General Federation of Women's Clubs at the 1938 Triennial, has proved most sympathetic in her support of calendar reform and her fine cooperation was a strong factor in the successful outcome of the resolution in California.

Realizing that any reform movement is a matter of education, and that it would be impossible in the space of two years to get details of the proposed calendar thoroughly circulated among the 14,500 clubs of the General Federation, a letter has gone to Presidents of State Federations and to State Chairmen of Calendar Reform in all the 48 states, the District of Columbia and Alaska, asking their cooperation in placing this information in the hands of club women in their respective states.

Club women are representative women. They are not all women of leisure, for many of them are included in the world's business and professions. They are the homemakers of America. They constitute a major portion of those who further the cause of the Church. The teachers of this nation's youth find their best expressions through club programs and activities.

The General Federation of Women's Clubs is the largest organized body of women in the world. To see such an organization endorse The World Calendar is most heartening to those who believe that a better order of life will be effected through the adoption of an orderly arrangement of time.

BRITISH CALENDAR INCONVENIENCES

From the English Churchman

A CONVENIENT summary of the inconveniences of the present calendar may be found in "Dates and Days," a pamphlet issued by the Rational Calendar Association. Every year the whole almanac is completely changed. Neither the months, the quarters, nor the half-years are comparable with one another. A month may consist of 28, 29, 30 or 31 days.

The first quarter of the year contains 90 days, the second quarter 91, and the two last quarters 92 days; one half-year is three days longer than the other. The year is not exactly divisible into weeks; dates, therefore, never fall on the same day from year to year. The same month in different years may contain four Sundays or five. In consecutive months the number of working days always varies. Sometimes there are 52, sometimes 53, pay-days, sometimes two Easters in the fiscal year, and payments of interest, dividends and rents, and currency of bills of exchange and the terms of legal contracts are greatly complicated by the want of a fixed year. The banks have to use elaborate special tables in order to make accurate calculations in current accounts, and the work of accountants, auditors and Treasury officials is unnecessarily magnified by the universal irregularity. For intelligent social planning, accurate statistics are essential and an increased uniformity in trade sociology and economics is desirable.

PROFESSOR ARTHUR E. KENNELLY

By C. D. Morris

CALENDAR REFORM lost one of its stanchest friends and ablest leaders in the death on June 19 of Dr. Arthur Edwin Kennelly, Professor Emeritus of Electrical Engineering at Harvard University and Massachusetts Institute of Technology. It was Professor Kennelly who, between 1935 and 1938, organized the allegiance of many important American scientific organizations in favor of The World Calendar. Prior to that time, the astronomers were the only ones who had taken definite positions on a world front for the revision of the calendar.

Professor Kennelly was born in Bombay, the son of Captain David Joseph Kennelly of the British army. He was graduated from University College, London, as an electrical engineer, and served his apprenticeship in his chosen career as chief electrician of a cable repairing steamer for the Eastern Telegraph Cable Company, England's principal undersea link with the Mediterranean and the Far East. He came to America as chief assistant to Thomas Edison in his electrical laboratories, serving with Edison from 1887 to 1894. During the latter part of this period he established himself as an engineering consultant in the firm of Houston and Kennelly, Philadelphia. This commercial undertaking continued until 1901, when he went to Harvard to devote the rest of his life to research.

He was a member of most of the important scientific organizations in his field, national and international, and received honorary degrees from universities in the United States, England, France, and Germany. Among his scientific accomplishments was the co-discovery (with the English mathematician, Oliver Heaviside) of the ionized layer surrounding the earth—an invisible reflecting surface or surfaces in the upper atmosphere, which deflects radio waves, now popularly known as the Kennelly-Heaviside Layer.

It was as Vice-President of the American Academy of Arts and Sciences and a leading member of many other important scientific organizations that he undertook the study of calendar reform in 1934. His painstaking and exhaustive research resulted in an address, delivered before the American Philosophical Society on April 18, 1935. He appears to have chosen this organization for the opening of his campaign because of its age and influence—it was founded in 1727 "for the purpose of promoting useful knowledge" and its membership of 500 is selected "from among men of the greatest eminence in science, letters and the liberal arts."

His address, entitled "Proposed Reforms of the Gregorian Calendar," occupies 40 pages in the 75th volume of the Society's "Proceedings," and is available in a pamphlet reprint in the Publications from the Harvard En-

gineering School (Title No. 147, 1934-5). Excerpts from it were published in the Journal of Calendar Reform in October, 1935.

Presentation of Professor Kennelly's address with the able assistance of Dr. Edward V. Huntington of Harvard was followed immediately by passage of a resolution stating that "the American Philosophical Society, having considered the two principal proposals for calendar reform mentioned in the League of Nations report, hereby expresses its preference for The World Calendar, and Resolved, that the Society would welcome adoption of this 12-month plan, provided a substantially unanimous agreement among civilized peoples is secured in favor of the change."

From this beginning, Professor Kennelly proceeded, at the December, 1935, meeting of the American Association for the Advancement of Science, to obtain the concurrence and enthusiastic support of that widespread and influential organization. Again he was strongly supported by Professor Harlan Stetson of Harvard University. Their resolution stated: "Whereas this Association is already on record as approving a simplification of the calendar; and Whereas the League of Nations in 1931 proposed two plans for serious consideration: one, the 13-month plan; the other the 12-month equal-quarters plan known as The World Calendar; and Whereas the 12-month equal-quarters plan has the advantages of a minimum of disturbance of the present system and greater flexibility in subdivision of the year: Be it therefore Resolved, that the American Association for the Advancement of Science approves the 12-month equal-quarters plan for the simplification of the calendar."

In the Spring of 1936, Professor Kennelly as a member of the National Academy of Sciences in Washington, D. C. (an official body of scientists established by act of Congress "to investigate and report on any subject of science or art whenever called upon by any department of the Government"), undertook a questionnaire of the membership of the Academy in order to prepare the membership for a study of the subject of calendar reform whenever the U. S. Government might ask for it. In undertaking this questionnaire he desired to cancel the impression that the Academy was an advocate and supporter of the Eastman 13-month plan. In this letter to each of the members of the Academy, in which he had the support of Dr. Gano Dunn, President of J. G. White Engineering Corporation, and Prof. Ross G. Harrison of Yale University as signatories, he said:

"As you will doubtless recall, the National Academy of Sciences passed a resolution in 1928 endorsing the principle of calendar reform. The particular plan in favor at that time was the 13-month plan sponsored by the late Mr. George Eastman. At the League of Nations conference in 1931 a second plan, the 12-month equal-quarters plan known in this country as The World Calendar, was brought into the picture. Discussion since that time has made it clear that the 13-month plan has no reasonable chance of securing the necessary world-wide approval, while a rapidly increasing number of important organizations have endorsed the 12-month plan as being intrinsically the more desirable."

Replies to this letter were received from about 115 members, of whom 108 favored The World Calendar. Only five or six were opposed.

During the next three years, Professor Kennelly continued to promote the adoption of resolutions by important national and international scientific organizations, until, at the day of his death, it could be asserted that scientists were united in a definite and stated support of The World Calendar.

TIME LORE IN ANCIENT ISRAEL

By Dr. Thomas Mann

(From *Young Joseph*, published by Alfred A. Knopf, Inc., New York City, and Martin Secker and Warburg, Ltd., London. Reprinted by permission)

JOSEPH learned of Eliezer about the universe, the heavenly one: ideally composed of the upper heaven, the heavenly earth of the zodiac, and the southern ocean of the heavens. And about the earthly universe as well, which precisely corresponded, being likewise in three parts, the skyey heaven, the kingdom of the earth, and the earthly ocean. This last, so he learned, ran round the earth's disk in a band, but was also beneath it, and at the time of the great flood might break through all the cracks and mingle its waters with those of the down-rushing heavenly sea. But the earthly kingdom was just like the firm-trodden earth to look at, and the heavenly earth up above was like a mountainous country with two peaks, the sun and the moon, Horeb and Sinai.

Sun and moon, together with five other moving stars, made up the seven which is the number of the planets and bearers of the command, which went round the dam of the zodiac in seven circles of differing circumference; so that this was like the seven-tiered tower whose rings of terraces led up to the highest heaven of the north and the Almighty's seat. Yes, there sat God, and His holy mount glittered as with fiery precious stones—just as Mount Hermon in the north glittered in his snows above the land. As he talked, Eliezer pointed to the gleaming white height in the distance, visible from everywhere and so also from the tree of enlightenment; and Joseph distinguished not between earthly and heavenly.

He learned the wonder and the mystery of numbers: sixty, twelve, seven, four, and three; the divineness residing in measure, and how everything agreed and corresponded, so that one could only wonder at and adore the greatness of the harmony.

Twelve were the stations of the zodiac; they formed the stations of the great circle, and were the 12 months of 30 days each. But the small circuit corresponded to the great; for it too was divided into 12 sections; thus there was a space of time 60 times as great as the course of the sun, and that was the double hour. It was the month of the day, and proved just as significantly divisible. For the diameter of the sun's course was contained in the course of the sun as visible at the equinox, precisely as many times as the year had days: namely, 360 times; and on just these days the rising of the sun, from the moment when its upper rim appeared over the horizon to that when it stood full and clear, lasted the 60th part of a double hour. That then, was the double minute; and as the great circle was formed out of summer and winter, out of day and night the small one, so from the 12

double hours came 12 single ones, for the day and for the night and 60 single minutes for each hour of the day and night.

What order, harmony, and satisfaction in all that!

But mark once more, Dumuzi, son of the true wife! Make thy senses clear, calm, and alert!

Seven was the number of the moving stars and bearers of the command, and to each belonged a day. But seven was also and especially the moon's number, which marks a path for its brothers the gods there in the sky; for the number of its quarters are seven days each. Sun and moon were two, like everything else in the world and like yes and no. Thus one might group the planets as two and five—and how righty too, considering the five! For that number had a wonderful relation with 12, seeing that five times 12 make the 60 already shown to be sacred; but even more wonderful with seven, for five and seven made 12. And that was not all. For by such division and grouping one got a five-day planetary week, of which 72 came in the year. But five was the number by which one must multiply the two-and-seventy to arrive at the glorious 360—and this was at once the sum of the days in the year and the result of that division of the sun's course by the longest line which could be drawn upon the disk.

How wonderful that was!

On the other hand, one might group the planets into three and four, upon the highest authority from both sides. For three was the number of the rulers of the zodiac, sun, moon, and Ishtar. Moreover it was the world-number, it determined both above and below the constitution of the universe. Again, four was the number of the quarters of the earth, to which corresponded the times of day; likewise it was the number of the parts into which the sun's course fell, each presided over by a planet; also the number of the moon and Ishtar, each of which displayed four phases. But if you multiplied four by three, what did you get? You got twelve!

Joseph laughed. But Eliezer lifted up his hands and spoke: "Adonai!"

And how did it come that if you divided the days of the moon by the days of its quarters—namely, four—you got again the seven-day week? That was the work of His finger!

With all this young Joseph, under his elder's watchful eye, played as with a game, amusing and profitable at once. He perceived that God had given man understanding, in order that he might deal with these sacred matters and make them more consistent: man, then, had had to make the 365 days match up with the solar year by intercalating five days at the end. They were hard and evil days, days of dragons and cursings and wintry nights; only when they were over did spring appear and the blessing once more prevail. Here the number five appeared in intolerable aspect. But 13 was also bad—and why? Because the 12 moon months had only 354 days, and from time to time extra days had to be shoved in, which cor-

responded to the 13th sign of the zodiac, the raven. Its remainder character stamped the 13 as an unlucky number—just as the raven was a bird of ill omen. Therefore it was that Benoni-Benjamin had wellnigh died,* when he went through the gates of birth as through the narrow pass between the peaks of the high mountains of the world, and was almost overcome in the struggle against the powers of the underworld—all because he was Jacob's 13th child. But Dinah had been accepted as a sacrifice in his stead, and Dinah perished.

It was well to see into the absolute and penetrate into the nature of the mind of God. For His wonder-working with numbers was not quite without flaws, and man had to have wits enough to adjust it. But the adjustment was attended with misfortune and cursings, and even the number 12, otherwise such a fine number, became ominous, for it had to be added to the 354 days of the moon year to bring them up to the 366 days of the lunar-solar year. But if one took 365 days as the right number, then there was always lacking, according to Joseph's reckoning, a quarter of a day; and this amounted in the course of time to 1460 quarters, or an entire year. That was the period of the dog-star; and Joseph's conception of time and space now became superhuman, it passed on from the little circles to more and more mammoth ones which circled far round them, to closed years of awe-inspiring extent. The day itself was a little year, with its times and seasons, its summer daylight and winter night, and the days were closed into a great circle. But it was great only relatively speaking, and 1460 of them closed to comprise the year of the dog-star. The world, however, consisted of the overpowering course and cycle of the greatest—or even then perhaps not quite finally the greatest—years of all, of which each had its own summer and winter. Winter came when all the constellations were in the sign of Aquarius or Pisces; summer when they were in the sign of the lion or the crab. Every winter began with a flood, every summer with a fire; so that all the great circles and world-revolutions had their definite beginning and end within which they were comprised. Each of them contained 432,000 years and each precisely repeated all those before it, since the constellations returned to the same position and must reproduce the same effects in great and in small. Hence it was that the world-revolutions were called "renewals of life," also of course "repetitions of the past" and "everlasting recurrence." Likewise their name was Olam, "the aeon"; but God was the Lord of the Ages, El Olam, He living throughout the ages, Hai Olam, and He it was who had given to man *olam* in his heart; that is to say, the capacity of thinking in aeons and thus in some sense the mastery of them.

This was knowledge of the most majestic.

*EDITOR'S NOTE: His mother, Rachel, wife of Jacob, died.

EASTER PARADE

By THOMAS WAYLING

Parliamentary Press Gallery, Ottawa, Canada.

WHENEVER the subject of the calendar is mentioned in our family, my wife and daughter bring up a trip which they made to New York City at Easter time a few years ago. They planned their trip with many little quivers of anticipation. They would visit the shops, the theatres and make a round of visits. They would go to a famous church on Easter Sunday—and they would see the Easter parade.

Alas for the movable date that is Easter. March 28, the Easter Sunday of that year, turned out cold and chilly. Easter finery didn't blossom as in the years when Easter came late; when the weather was warm. And the Easter Parade was blue instead of gold. Instead of a Red-Letter Day in the calendar it was a Dead-Letter Day.

It is the habit of the eternal feminine to give a thought, a big thought to Easter as a Day of Adornment. After all Nature herself is feminine and in the spring puts on her first brightness of the year. The name Easter is derived from the Anglo-Saxon Eostre, goddess of spring.

When ecclesiastic authorities in bygone ages quarreled about the date of Easter, they had not in mind the observance of the coming of spring. With the Jewish Christians it was a question of commemorating the Passover, and with the non-Jewish Christians a celebration of Holy Week, Crucifixion and Resurrection. Within the ancient church there was dissension. The western Christians observed Easter on Sunday and the eastern Christians on the fourteenth day of the month, no matter what weekday it came. The Council of Nicaea finally decided Easter should be the first Sunday following the full moon after the vernal equinox, March 21. But as the moon could not always be observed, the day of the full moon had to be calculated. The astronomical mathematicians did not agree on the cycles to be used as a basis of calculation. In certain years, the Roman, British and Irish churches celebrated Easter on different Sundays.

Meanwhile other calendar problems arose to plague the church. In 1582 the calendar and the sun were ten days out of step, and Pope Gregory XIII had to excise ten days from the calendar to get March 21 where it really belonged. For centuries March 21 hadn't been March 21. It was just a day they thought was March 21. And on such wavering uncertainties was Easter based. As Easter dominates about 17 weeks of the church calendar, the mixup was pretty far-reaching.

My wife and daughter would indignantly repudiate any idea that they observed Easter for anything except its religious significance. But even so, it isn't a true anniversary; it is a pseudo-fixation by the church, so

that there can be no point in having Easter in the cold raw days of March.

The Christian significance of Easter is the joy of the Resurrection, which meant so much to the world. Human nature is human nature; and if the world is to be joyous it should be in a period of the year when the whole world smiles, when nature is reawakening, when there is a world Resurrection.

The Easter parade is a reflection of the coming of spring, when womenfolk adorn themselves as Mother Earth herself is doing. Mother Earth, however, is too wise to try it in the cold, blustery days of March. Her crocuses, tulips and other flowers don't spring up to be frozen down.

In 1928 the British Parliament passed a "permissive statute," whereby Easter was to be the second Sunday in April. Had that been in effect in Canada and the United States on the occasion of the New York visit, Easter would have been commemorated on April 11, two weeks later than its actual observance. It would still be a movable affair, but it wouldn't move so much. It might roll around a bit like an Easter egg instead of jumping frantically like an Easter rabbit.

What is really needed is a *fixed* Easter, and fixed at a date when spring is really on the way, and the Resurrection of life from the winter-tombed earth is really here. Christmas Day is a fixed date, and it is not at all on the 1937th anniversary of the day of Christ's birth. Theophilus of Antioch in a probably spurious passage states that the Gauls celebrated the birth of the Lord on the 25th of December. Hippolytus at a later date said this date was a Wednesday, but a Latin chronographer in 354 stated that it was a Friday, and a German commentator insists that it was a Sunday. Other priestly chronologists put the birth date of Christ variously on August 28, May 20, April 19, April 20. Clement of Alexandria puts it on November 17, and a Latin tract written in Africa in 243 says it was March 28.

In Britain the 25th of December was a festival long before the birth of Christ. In 1644 the English Puritans actually forbade by act of Parliament any merriment or religious services on this day, on the ground that it was a heathen festival, and ordered it to be kept as a fast. Charles II revived the feast but the Scots adhered to the Puritan view.

So if the birth of Christ may be commemorated on a set date, why not His Resurrection? Easter in April would be a festival of rejoicing in actuality. There are great doings the world over at Easter-tide and a movable Easter has been a vexation of spirit for centuries.

My wife's Easter hat and my daughter's Easter outfit are trivial things in the great matters of ecclesiastical moment. To mention them in the same page seems almost sacrilege. Yet they mean added joy at Easter to their wearers, the outward and visible sign of spring, of a reawakening of the spirit, of the resurrection of a New Year in Nature.

Therefore because it was a cold and dreary Easter, and because they were not as happy as they might have been had Easter been later, and because a million other wives and daughters felt badly too—I'm all for a reform of the calendar, with an Easter which will come when Easter should come every year, when spring is on the way.

The spiritual significance of Easter is and should be paramount, but this is a material world and a vast amount of business revolves about Easter. Because Easter waves in the calendar like an Easter cape in the wind, there is a vast amount of uncertainty in the business. From the

material standpoint Easter should be brought to a fixed point in the year.

To make Easter really a fixture, the calendar itself will have to be *fixed.* "Swear not by the moon, the inconstant moon" is good advice in calendar-making as in human relations. A world priding itself on efficiency has been putting up far too long with a calendar that is inefficient; for so much depends on it and it is so undependable.

To show the inconsistency of Easter Sunday, a study of tables for finding Easter in the Common Prayer Book is revealing. From 1937 to 1945 (a period of only eight years), we discover that Easter is a most disconcerting "jumping Easter Rabbit."

This year (1939) Easter fell on April 9. In 1940 it will come on March 24, 16 days earlier and one of the earliest possible dates upon which Easter can fall. Three years later, in 1943, it will fall on the latest possible date for its observance, April 25, and the year immediately after, 1944, Easter will once again find its lost balance and come on April 9, as it did this year. Then in 1945, when it is expected we shall all be enjoying The World Calendar, Easter will have its own particular date, April 8. April 8 is the in-between date of the two extremes. It is interesting to note that The World Calendar Association advocates the "mean" date for Easter observance—April 8.

The writer is fully aware that the question of a fixed Easter date is entirely dependent upon church action and he has no desire to dictate in any way to religious authorities. He is primarily interested in securing a fixed calendar, realizing that only as the calendar is fixed can feast-days, national and personal anniversaries be fixed also.

There is no denying the valuable aid that has already been given to calendar reform by the interest which Christian churches have taken in the fixation of an Easter date, so notably expressed in the 1936 Chamby resolution by the Universal Christian Council, representing all the Protestant and Eastern Orthodox Churches. Churches are cooperating with the secular world in the general desire for a new and perpetual calendar, and a fixed Easter. Such voluntary cooperation by both secular and religious groups is a welcome demonstration that there actualy exists no opposition or antagonism between them; that in both fields of activity there exists a genuine desire for mutual cooperation.

In 1931 the Canadian delegates at the calendar reform meeting called by the League of Nations expressed themselves in favor of the 13-month year, but opinion has changed decidedly since then. There is now a definite transfer of Canadian allegiance to the perpetual 12-month equal-quarter calendar. The opinions of 1931 are not the opinions of today. So we in Canada are all for a fixed definite calendar, with fixed days and weeks and months—and somewhere in that calendar a fixed Easter, fixed somewhere where spring can find it, fixed really in the spring—in the month of April.

RUSSIAN CHURCH CONSIDERS

By Paul Haensel

Professor of Public Finance at Northwestern University, Formerly Professor of Economics at the University of Moscow, Russia

(Translated from the Russian by Dr. Alfred E. Johns)

Debate on the subject of calendar reform has been active in the publications of the Russian Orthodox Church in America during the past two or three years. While the Russian Orthodox Church is a part of the organization of the Eastern Orthodox Church, it is nevertheless autonomous and independent, and is not bound to follow the leadership of the Patriarchate in Constantinople, which has long been active on behalf of calendar revision. The Russian Orthodox Church, particularly in America, includes a certain number of sincere theologians who cling to the belief that the old Julian calendar should still be the rule of their life. Professor Haensel, one of the most distinguished Russians in America, wrote this article for publication in Russian, in order to make clear the arguments and counter-arguments which are being brought to bear on the question of calendar reform. His article is reprinted here for its reference value to general students of the calendar.

SOME time ago, General Basil V. Cheslavsky (Chesley) eloquently presented the proposed World Calendar to readers of the influential *Russian Review* of Chicago. This drew a reply, in due course, from Father Alexander Lobanoff, a Cathedral Archdeacon of the Russian Orthodox Church, in the columns of *Rossia,* a Russian-American daily published in New York City. Father Lobanoff opposed calendar reform on the ground that it would violate the "Seventh Article" of the Apostolic canons of the Russian Orthodox Church.

Unfortunately Father Lobanoff's arguments simply follow ancient traditions, and they neglect certain more recent, but completely authoritative, Orthodox theological literature on calendar problems.

Inasmuch as his position is based entirely on compliance with the famous "Seventh Article," it will be well to state the text of this article: "Anyone, be he bishop, priest or deacon, who celebrates the Holy Easter Festival before the Vernal Equinox with the Jews shall be expelled from his holy office."

Let us first consider the history of this "Seventh Article." In 325 A. D., when the Nicean Council was convoked, the Emperor Constantine proposed that all Christians celebrate Easter simultaneously. At that time there existed a heretic teaching of the so-called Quartodecimans (Protopaschites), who sought to celebrate Easter simultaneously with the Hebrew Passover. Emperor Constantine resented this. "How strange the haughtiness of the Jews," he said. "They think we can do nothing without their enactments."* At that time, the day of celebrating Passover by the

* See Hefele, *Histoire des Conciles,* French edition, Paris, 1907, t. 1, Part 1, page 460.

Hebrews was determined by the Sanhedrin, and only in 360 A. D. was the Hebrew calendar established, setting a definite day for the celebration.

At about the time of the Council of Antioch (341), the problem of celebrating the Christian Easter became so acute that the Council, engaged in a controversy with the Quartodecimans, adopted the so-called "Seventh Article," forbidding the celebration of the Christian Easter before the Vernal Equinox with the Hebrews (in Greek *meta Judaion*, which means "together with the Jews"). This did not mean at all that an occasional coincidence of the Christian and Hebrew Easters was not permissible, but it prohibited a *premeditated* adaptation of the Christian Easter to the Passover of the Jews (at that time being determined by the Sanhedrin).

This becomes more evident in the fifth century when there were nine occasions in the Alexandrian Church when Easter was celebrated on the same day as the Hebrews' Passover—and for this not a single bishop, priest or deacon was expelled from his holy office. Then the problem disappeared, because such a coincidence became mathematically impossible.

The Orthodox Julian year equals 365 days, 8 hours, and the Hebrew equals 354 days, 8 hours, 48 minutes, 34.44 seconds—i.e., the Hebrew year is considerably shorter. The Church Fathers were well aware of this as far back as the fourth century, and they knew the works of Hipparchus, who pointed out the inaccuracies of the lunar calendar. They knew quite evidently that after 57,000 years the Julian Easter would begin to fall before the Hebrew Easter. This means they could not make a law penalizing the accidental concurrence of the Christian and Jewish holy days, for sooner or later that would be unavoidable. All of which has been long ago explained in the Russian Orthodox theological literature by Zhylyayev.

If one should stick to the long-refuted interpretation which Father Lobanoff has revived, it is evident that sooner or later we would have to deprive all Orthodox bishops, priests and deacons of their offices, since after 57,000 years the Orthodox Easter unavoidably would begin to fall before the Hebrew and finally concur with it (after 114,000 years).

The Fathers of the Church knew this inevitability. But they were interested mainly in eradicating the heresy of the Quartodecimans, and worried very little about what would happen after many thousands of years. It is therefore clear that Father Lobanoff's interpretation is absolutely illogical and implies a baseless charge of astronomical ignorance against the Church Fathers.

The Council knew the inaccuracies of the Julian calendar (established by Julius Caesar and accepted by the Orthodox Church). It also was aware of the fact that, due to the inaccuracies of the Julian calendar, the entire calendar (including Easter) would little by little get out of step with the seasons of the year, as is actually happening at the present time, although so slowly that it is little noticed even during a period of several centuries.

If our descendants after 300 or 500 generations still use the Julian calendar, then Easter will be celebrated during the heat of the summer, in autumn and in early winter. (There is nothing terrible about this, for in the Southern Hemisphere Christmas is now being celebrated in summer and St. Peter's Day in the bitter cold. After thousands of years of the Julian calendar this would be reversed. The Northern and Southern Hemispheres would change places in respect to the seasons of the year in which Easter would be celebrated.)

In general the dates set for celebrating various holidays were established arbitrarily by the Church. In the second half of the ninth century, Christmas was fixed for December 25 to eradicate from people's minds the pagan celebration of the Sun, falling on that same date (Natalis Solis Invicti). Even the year of the birth of Christ, as computed by the Christian calendarists, is inaccurate. The date of the Crucifixion cannot be determined with sureness: the 14th or 15th of Nisan, on the eve of the Hebrew Passover (according to John), or on the very day of Passover (according to Matthew, Mark and Luke). In general, the Hebrew Passover was supposed to have been celebrated in the month of Abib, the month of the "ripe ear of corn," but the Hebrew calendar underwent various changes.

Father Lobanoff, in discussing calendar reform, really directs all his objections simply against the acceptance by the Orthodox Russian Church of the Gregorian calendar. But this has nothing to do with the problem of The World Calendar. Father Lobanoff is absolutely unfamiliar with this proposal, and only repeats the old arguments against the acceptance of the Gregorian calendar or the New Style system.

A long time ago the late Professor Golubinsky of the Moscow Ecclesiastic Academy urged with great authority the unsoundness of the proposals to change to the Gregorian Style—in his book *Problem of Equalizing Civil and Astronomical Year* (Moscow, 1899)—basing himself mainly on the "Seventh Article." But his arguments have long since been refuted by historical criticism, although I think he was right when he said that the Russian Church would not benefit much by accepting the Gregorian calendar. Of the same opinion was Mr. Salidilov, who proposed an entirely new Russian calendar, acceptable to the Orthodox Church without the approval of the so-called "Papal Mantle."

The fact is that the Julian calendar is far simpler than the Gregorian. Every 28 years it repeats itself in all the days of the year, and the so-called Great Indiction—that is the repetition of both weekdays, month-days, and holidays—occurs every 532 years. In the Gregorian calendar, according to Stepanov, the Great Indiction requires 39,900,000 years. If it is necessary to correct the Julian calendar in order that it does not run ahead of the seasons of the year, it is only necessary to add one leap day every 128 years, as was recommended in Russia in 1910. The Gregorian calendar has

no special advantages over the Julian calendar, although in the former the error against the sun involves only one day in 4000 years.

The main quarrel with the Gregorian calendar in Russia has been Pope Gregory's order that 10 days be dropped to make up for past chronological errors. This was long regarded by Russian theologians as a formal violation of the "Seventh Article," if one is to interpret it literally (i. e., *incorrectly*). In 1940, for instance, the Roman Catholic and Protestant Easter (in the New Style) will fall before the Hebrew Passover, and in 1954 and 1981 the two holy days will occur on the same day, for in these years the Hebrews transfer their Passover from Saturday to Sunday.

For Russia's not having gone over to the Gregorian calendar (New Style) years ago we are indebted to a Lutheran. In 1830, the change was recommended by the Academy of Science. The Minister of Education, a Lutheran, Prince Carl Alexander Lieven, submitted the findings of the Academy to the judgment of Czar Nicholas I, but expressed his own opinion against the Academy, contending that "the introduction of any important government change ought to be considered from the point of view of advantages and disadvantages." The Czar agreed with this "profound" opinion and rejected the reform.

So much for the historical background of the present situation in the Russian Church. Calendar matters, we have shown, have been a very considerable subject of controversy in the past. But those old problems have very little to do with the present proposals for adoption of a new World Calendar, and I am very glad that the editor of the *Russian Review* has so emphatically directed attention to this fact. Unfortunately, however, Father Lobanoff (in the columns of *Rossia*) has completely misunderstood the question, failing apparently to comprehend that it has nothing in common with ancient controversy of Old Style-Julian calendar *versus* New Style-Gregorian.

If Father Lobanoff seriously proposes that the Russian Church should retain the Julian calendar in the midst of a world which adopts the new World Calendar, I should like to point out some of the difficulties which would inevitably follow. The new calendar will be perpetual and unchangeable, with New Year's Day always falling on Sunday. Easter and all the so-called movable feasts would be stabilized and "fixed."

Suppose the Russian Church should try to maintain the Julian calendar at the same time that The World Calendar was being used in civil life. Approximately 27 times out of 28, the days of the week of the Church would not correspond with the civil days of the week. Only in the years 1934, 1940, 1945 and 1951 does the Julian calendar bring New Year's Day on Sunday, and in those years there would be an accidental coincidence in weekdays (from January 1 to February 28), between the Russian Church calendar and the civil calendar.

The proposed new calendar is extremely simple, accurate and exact. It will correspond exactly to the solar year of 365.2422 days. One and the same calendar will serve eternally. But if the Russian Church should fail to adopt it, the Church will find its church-calendar Sunday coming on a civil work-day, and its work-days coming on civil days of rest. Imagine the situation of American members of the Russian Church, if all through the year their church Sundays came on Tuesday or Thursday, and their official Easter on a Monday or Friday in the civil calendar.

Orthodox Russians in America have been used to the inconvenience of celebrating Christmas on a date which is January 7 to the civil world around them. But imagine this inconvenience when repeated 27 years in succession and 50 times a year!

I am convinced that the Russian Church should adopt the new calendar, adapting the celebration of its holidays and saints' days to the new system.

Acceptance of The World Calendar by the nations of the world seems inevitable. All the other Christian churches find no objection to it, and many of them have been enthusiastically advocating the change for many years. The Russian Orthodoxists should do likewise. And the question of whether or not there will be a collision with the Jewish Passover under the new conditions (let the theologians remember that this is inevitable anyhow within a few thousand years in the case of the Julian calendar), may well be disregarded—as indeed it was by Constantine the Great, a ruler regarded by the Russian Orthodox Church as "co-equal" with the Apostles.

History tells us that changes in the calendar and in dates for celebrating holy days were often made by the ancient Councils of the Church. There is no dogmatic principle which rivets God's will to any specified dates in the calendar. On the contrary, the Bible plainly states that the Sabbath was made for man, "and not man for the Sabbath." The Apostle himself ordered his followers not to give any pressing significance to the calendar: "Let no man therefore judge you in meat or in drink or in respect to a holy day, or of the new moon, or of the Sabbath days."

On the whole, I would urge particularly that the Russian Church should take good care that the introduction of the new World Calendar does not find it unprepared and unaware.

UNIVERSAL TIMER

INVENTOR EDWARD H. WERNER of 282 Ridgeland Ave., Elmhurst, Ill., has applied The World Calendar to a clock dial which he calls the "Universal Timer." It is the most exact clock-face which has ever been produced, registering the navigator's "Right Ascension," celestial longitude, and the dates on which the sun enters the various constellations. The dial has wide interest and usefulness for navigators, aviators, radio operators, mathematicians and astronomers.

Mr. Werner has been an advocate of The World Calendar for several years, and a member of The World Calendar Association. He has written and lectured on calendar reform in many educational journals and forums in the mid-West.

A DOCUMENT FROM 1751

To students of the calendar, there is naturally a keen interest in the legal steps by which the Gregorian calendar was eventually adopted in England and America. There has just come to light, in the archives of the Friends Historical Society of Swarthmore, a pamphlet printed by Benjamin Franklin for the Society of Friends, in 1751, immediately after the British legislation of the Gregorian calendar. This document constitutes the acceptance by the Quakers of this legislation.

TO the quarterly and monthly meetings of Friends in Great Britain, Ireland and America. *Dear Friends;* Pursuant to the directions of the last yearly meeting, and the report of a committee appointed by the said Meeting to consider what information or advice might be necessary to be given to Friends, in relation to an Act made the last session of Parliament for regulating the commencement of the year and correcting the calendar now in use, this Meeting hath thought convenient to communicate unto you the following Advices, namely:

1. By the said Act it is ordered and enacted that: "The supputation according to which the year of our Lord beginneth on the 25th day of March shall not be made use of from and after the last day of December, 1751, and that the first day of January next following the said last day of December shall be reckoned, taken, deemed and accounted to be the first day of the year of our Lord 1752," and so on from time to time, "the first day of January in every year which shall happen in time to come shall be reckoned, taken, deemed and accounted to be the first day of the year, and that each New Year shall accordingly commence and begin to be reckoned from the first day of every such month of January."

2. The opinion of the said committee, agreed to by the yearly Meeting, was: "That in all the records and writings of Friends, from and after the last day of the Tenth Month, called December, next, the computation of time established by the said Act should be observed; and that accordingly the first day of the Eleventh Month, commonly called January, next, shall be reckoned by Friends, the first day of the First Month of 1752":

The	*Eleventh* *Twelfth* *First* *Second* *Third* *Fourth* *Fifth* *Sixth* *Seventh* *Eighth* *Ninth* *Tenth*	Month, called	*January* *February* *March* *April* *May* *June* *July* *August* *September* *October* *November* *December*	shall be reckoned, and stiled the	*First* *Second* *Third* *Fourth* *Fifth* *Sixth* *Seventh* *Eighth* *Ninth* *Tenth* *Eleventh* *Twelfth*	Month of the next, and every succeeding Year.

3. And whereas for the more regular computation of time, the same Act of Parliament doth direct that: "the natural Day next immediately following the second day of September in the year 1752 shall be called, reckoned and accounted to be the 14th day of September, omitting for that time only the 11 intermediate days of the common calendar." The opinion of the said committee, approved by the yearly Meeting, was: That Friends should observe of this direction, and omit the said 11 days accordingly.

And we think it may be useful and expedient, on the present occasion, to revive in your remembrance some of the motives which induced our ancient Friends to forbear the vulgar appellations of the months and days, and to observe in their conversations and writings such names as were agreeable to Scripture, and the practice of good men therein recorded.

The children of Israel, the people whom God chose out of all the families of the earth to place his name among, and to make himself known unto, were strictly commanded, not only to abstain from the idolatrous practices of the nations in the midst of whom they dwelt, but were enjoined to be circumspect in all things that the Lord commanded, and even to make no mention of the names of other gods, neither to let it be heard out of their mouths (Exod. XXIII. 13). This injunction was not relative to any legal or typical rites, external ceremonies, or institutions of the law peculiar to the Jewish nation, but was a perpetual command and standing ordinance, respecting the honor of One Almighty Being, the same yesterday and forever, and as such ought to be regarded by us and by all the generations of those who with the heart believe, as well as with the tongue confess, that the Lord he is God, and that there is none else besides him (Deut. IV. 35) who hath declared I am the Lord, that is my name, and my glory will I not give to another, neither my praise to graven images (Isaiah XLII 8).

Convinced of this great and everlasting truth, both by the testimony of the holy Scripture and the manifestation of that divine principle which leads those who are faithful to its teachings from all that would dishonor the name of God either in word or deed, our ancient Friends were conscientiously concerned to refrain from the use of those names of months and days which had been ascribed by way of honor to the idols of the heathen, from a firm persuasion that the glorious gospel day and time was come, wherein the Lord was fulfilling his covenant with Israel, namely: I will take away the names of Baalim out of his mouth and they shall no more be remembered by their name. (Hosea II. 17).

And that you may the more clearly discern the importance of that Christian testimony, borne by our predecessors in this case, we recommend what follows to your serious consideration, namely:

A Brief Account of the Origin of the Names of some Months of the Year, and Days of the Week, now customarily and commonly used:

1. January was so called from Janus, an ancient king of Italy, whom heathenish superstition had deified, to whom a temple was built, and this month dedicated.

2. February was so called from Februa, a word denoting purgation by sacrifices; it being usual in this month for the priests of the heathen god Pan to offer sacrifices and perform certain rites, conducing as was supposed to the cleansing or purgation of the people.

3. March was so denominated from Mars, feigned to be the god of War, whom Romulus, founder of the Roman Empire, pretended to be his father.

4. April is generally supposed to derive its name from the Greek appelation of Venus, an imaginary goddess worshipped by the Romans.

5. May is said to have been so called from Maia the mother of Mercury, another of their pretended ethnick deities, to whom in this month they paid their devotions.

6. June is said to take its name from Juno, one of the supposed goddesses of the heathen.

7. July so called from Julius Caesar, one of the Roman Emperors, who gave his own name to this month, which before was called Quintilis, or the Fifth.

8. August so named in honor of Augustus Caesar, another of the Roman Emperors. This month was before called Sextilis, or the Sixth.

The other months, namely September, October, November and December, still retain their numerical Latin names, which according to the late regulation of the calendar, will for the future be improperly applied. However, from the continued use of them hitherto as well as from the practice of the Jews before the Babylonish captivity, it seemeth highly probable that the method of distinguishing the months by their numerical order only, was the most ancient as it is the most plain, simple and rational.

As the idolatrous Romans thus gave names to several of the months in honor of their pretended deities, so the like idolatry prevailing among our Saxon ancestors induced them to call the days of the week by the name of the idol which on that day they peculiarly worshipped. Hence:

The First Day of the week was by them called Sunday, from their accustomary adoration of the Sun upon that day.

The Second Day of the week they called Monday, from their usual custom of worshipping the Moon on that day.

The Third Day of the week they named Tuesday, in honor of one of their idols called Tuisco.

The Fourth Day of the week was called Wednesday, from the appelation of Woden, another of their idols.

The Fifth Day of the week was called Thursday, from the name of an idol called Thor, to whom they paid their devotions upon that day.

The Sixth Day of the week was termed Friday, from the name of Friga, an imaginary goddess by them worshipped.

The Seventh Day they stiled Saturday, as is supposed from Saturn or Seater, by them then worshipped.

The continued use of these names of days, derived from such gross idolatry of the heathen, is a demonstration, how little the purity of the Christian religion was understood by the generality of those who came into the publick profession of it.

The following ages of Popish superstition not only indulged their proselytes in the use of such heathenish names and customs, but also invented and introduced other unsound and unscriptural practices in religion. For when the profession of the Christian religion became national, multitudes of the heathen priests, whose interest lay in the performance of rites, ceremonies and sacrifices, embraced prevailing Christianity with selfish views, and labored early with too much success to find employment for themselves by imposing on the people a new set of ceremonies and sacrifices, bearing some resemblance to those which in their former state of heathenism they had been accustomed to. From this corrupt source sprang the popish sacrifice of the mass, the celebration of which, at particular times, and on particular occasions, gave rise to the vulgar names of Michaelmas, Martinmas, Christmas, and the like.

Seeing therefore that these appellations and names of days, months and times, are of an idolatrous or superstitious origin, contrary to the divine command, the practice of good and holy men in former ages, and repugnant to the Christian testimony borne by our faithful Friends and predecessors in the truth, for the sake of which they patiently endured many revilings: Let neither the reproach of singularity nor the specious reasonings of such as would evade the Cross of Christ, turn you aside from the simplicity of the gospel, nor discourage you from keeping to the language of truth, in denominating the months and days according to the plain and scriptural way of expression; and so shall we follow the example of our worthy elders, and come up in a noble and honorable testimony against these and all other remains of idolatry and superstition.

From the Meeting for Sufferings in London, the Sixth Day of the Seventh Month, 1751.

MONDAY HOLIDAYS

By WALTER S. JEFFRIES

U. S. Congressman from New Jersey

REACTION to my recently announced stand on Monday holidays appears to be overwhelmingly favorable. The attitude of public officials and citizens alike convinces me that the plan would be of incalculable value, and that work should start at once toward securing legislation.

A Monday holiday law would set the celebration of all so-called national holidays on the nearest Mondays, with the exception of Christmas, Thanksgiving and New Year's. The purpose behind the plan would be to create more three-day week-ends thus giving the ordinary working fellow a Saturday, Sunday and Monday holiday frequently throughout the year.

As it is now, the cost involved to employers who shut down on week-ends, open for one or two days and then close again for one day in mid-week because it is a holiday, is staggering and unreasonable. (See page 124.)

INTERVIEW BY RADIO

By ADELAIDE HAWLEY

Director of "The Woman's Page," Mutual Broadcasting System

Text of a Broadcast on February 22, 1939

IF I WERE to say, on this 22d of February, when all the flags are flying, that George Washington was not our first President, our engineer, Jack Byrne, would probably cut me off the air. So I won't say it, and I don't need to, because Mr. Washington *was* our first President under the Constitution and that's all that counts, isn't it? His character and what he stood for are the things we cherish about Washington anyway—not only that he was first. It is just interesting to know that before the Constitution was adopted—during the years from 1781 to 1789, when the Articles of Confederation were the law of the 13 states, there were eight Presidents—one to a year. . . . Thomas McKean of Delaware; John Hansom—Maryland; Elias Boudinot—New Jersey; Thomas Mifflin—Pennsylvania; Richard Henry Lee—Virginia; Nathaniel Gorham—Massachusetts; Arthur St. Clair—Pennsylvania; and Cyrus Griffin—Virginia.

Maybe you knew about the eight pre-Presidents—I certainly didn't until I began digging around in the records—and I decided Father George wouldn't mind if we took a few seconds out of his birthday to mention his predecessors. As a matter of fact, while we're in the business of digging out surprises, George Washington was not born on February 22d—he was born on the 11th. The proof of it is in an entry in the Washington family Bible which reads: "George Washington, son to Augustine and Mary his wife, was born ye 11th day of February about 10 in the morning, and was baptised on the 30th of April following."

So, you may wonder as I did, why all the fuss about the 22d of February if the country's greatest blessed event actually took place 11 days earlier. After all, I am going to help judge cherry pies baked by the Girl Scouts this afternoon, and it hurts me to think I might have been smacking my lips over them almost two weeks ago. Well, it seems that in 1752 when the Father of his Country was 20 years old—perhaps not even dimly aware of his great destiny, there came a change in the calendar. Great Britain, after taking 170 years to make up her mind, finally adopted the calendar reform of Pope Gregory XIII, which had been in use in the Catholic countries since 1582. And after Britain took the step, the American Colonies one by one followed suit.

It seems that mankind has been tinkering with time since the dawn of his existence—experimenting with different methods of measuring the distance from sun to sun, from moon to moon, and from seed-sowing to harvest. And quite naturally the methods of measuring got more and more

accurate and satisfactory as the ages rolled by. This Gregorian calendar, which we now follow, for instance, is a vast improvement over the one before *it*, the brain child of Julius Caesar and his echo nephew—Augustus.

It would be nice if we could say that the Gregorian calendar is so much of an improvement over the others that it has all the answers to man's time problems. But unfortunately, 'tis not so—our holidays wander around and are liable to occur on any day of the week; Easter and Election Day and the opening of school have to be located all over again every year and perhaps worst of all, we have to stop and recite the old "30 days hath September," provided we remember it, whenever we want to reckon the days in a month—as if we were children.

Well, as you may have guessed from all this elaborate preliminary, there is a definite and well-organized movement on foot to take the kinks out of our present calendar and make it sympathize with the needs of business and education and the church and the countless activities of modern life. And don't go tapping your forehead to suggest that I am a mite *teched*, until you have heard the whole story which concerns us every one.

After all, the clocks of the world had to be stabilized in 1884. Before that, the time of day was what the man with the loudest voice said it was. If the clocks in Philadelphia were 20 minutes out with those in Cleveland, it was to shrug the shoulders and let the railroads fall where they might. Imagine what radio would have been like in those days! Announcers and engineers would have been stark raving crazy after one week of trying to keep up with Tom, Dick and Harry's watches.

As it is, American radio timing is the marvel of the world. We end this program, for instance, at thirty seconds after 11:59 so that there will be time to make the network "break" in the remaining 30 seconds . . . but to get on with the story of World Calendar reform which is the organization we just mentioned, it is the adopted brain child of one of the most interesting women I have met in a long time by any calendar. She is Miss Elisabeth Achelis (spelled A-C-H-E-L-I-S) and in a minute you shall meet her too—after I tell you a few things about her which she considers too unimportant to discuss.

Elisabeth Achelis was born and brought up in a day when Queen Victoria set the style for the education and behavior of young ladies. Her days followed the pattern exactly until her parents died and then suddenly Miss Achelis found herself facing the afternoon sun of life with no anchor except social affairs, the management of her house and clubs and charities. Her activities were very worth while, but not completely satisfying.

Then Fate put a finger in the pie. In 1929 Miss Achelis was spending some time at Lake Placid, and one day she drifted in to a club lecture on the subject of how to simplify life. The speaker was Dr. Melville Dewey, the man who invented the card index system which all our libraries now use,

and his idea of simplifying life was to adopt the Eastman 13-month calendar which was then having quite a vogue.

Miss Achelis listened politely and it seemed to her that the 13-month idea would be a hopeless muddle in actual operation—worse than the system we are using. She went home and forgot all about it, so Fate jogged her elbow again. This time it was a letter in a daily paper, calling attention to a 12-month equal-quarter calendar plan favored in Europe. The plan was good basically, and Miss Achelis recognized it as such. So she practically buried herself in the public library and studied the history of the calendar until her dreams were full of days and months tumbling over each other. But she came out of that library with a firm conviction that it was up to her to put the times back in joint—to twist Mr. Shakespeare a bit, Miss Achelis consulted her pastor and her business friends and when they admitted she had something, she gave up her social activities and put her affairs in shape to form The World Calendar Association.

Her first official act as President of the Association was to hie herself to Geneva in 1931 and to deliver such an intelligent sensible speech before the League of Nations, that she practically stymied the 13-month plan then and there. Doesn't it appeal to your sense of the dramatic that this lone woman should start out single-handed to change the world's mind?

And isn't it fairly typical of all pioneer women, from Joan of Arc to Madame Curie, that they are physically frail in appearance? So it is with Elisabeth Achelis. It's only when you look beyond her soft grey hair and the perfection of her dress that you notice the courage in her eyes and the determined set of her chin. Not that she is all iron by any means, because I found that she is beginning all over again a new kind of music lessons so that she can learn to improvise music out of her own head. . . . Now, so help me, I'm going to stop talking and give Miss Achelis a chance. . . .

HAWLEY: Miss Achelis, are many nations convinced of the soundness of The World Calendar and ready to accept it?

ACHELIS: Yes, 14; among them Chile, China, Norway, Peru, Greece, Turkey, and Brazil. There are *28 calendar committees* studying the improved calendar, in such countries as England, France, Italy, Germany and the United States.

HAWLEY: Perhaps we ought to go back to first principles and explain the plan of The World Calendar a bit more fully. What is the plan?

ACHELIS: The plan is really very simple. It is as simple as the clock. We shall continue to enjoy our familiar twelve-month year, but the *days* of the months are more evenly apportioned. This is done by dividing the year into equal quarters whereby each quarter is given three months of which the first has 31 days and the remaining two, 30 days each. This gives each quarter exactly three months, 13 weeks and 91 days with each quarter beginning on a Sunday and ending with a Saturday.

HAWLEY: Yes, but this will give the year only 364 days; what happens to the 365th day; is it discarded entirely, thrown in the scrap basket, so to say?

ACHELIS: Oh dear, no. Were we to do this we would quickly discover that the seasons would wander all over the calendar in a most disconcerting way. The 365th day is added at the end of the year after the last or fourth quarter is completed. It follows Saturday, December 30th, considered as an extra Saturday holiday called Year-End Day.

HAWLEY: Does this mean that we are to be given a new holiday?

ACHELIS: Yes, it is expected that this gift of a new holiday will be enjoyed by the entire world for a day of friendship, good-will, unity and cooperation.

HAWLEY: What is being done with the Leap-Year Day?

ACHELIS: The Leap-Year Day is placed in the mid-year after the completion of the second quarter. It will be dated June 31st.

HAWLEY: This is all most interesting but what are the actual advantages?

ACHELIS: The greatest advantage will be that the calendar like our clock will always be the same, year in and year out. By this I mean that month-dates will fall on the same weekday. For example, Labor Day will always come on Monday, September 4th, so that schools will open on September 5th. Should your insurance payment fall due say on Wednesday, February 15th, it will always fall due on Wednesday, February 15th. Obviously, the day, date and month agreement will be of great help to business, statisticians and accountants, as well as to transportation and tourists as holidays will always fall on the same weekday and month-date. Well, if your baby is born on a Thursday it will always observe its birthday on the actual day of birth. Should you choose Saturday for your wedding day, then its anniversaries will always come on Saturday, easy for your husbands to remember. No longer will the day of the week be the forgotten time-unit in our various anniversaries.

HAWLEY: And what about holidays? When will Washington's birthday fall in The World Calendar, for instance?

ACHELIS: It so happens that February 22d, which we are observing today on Wednesday, will always fall on Wednesday in the new calendar. But The World Calendar offers a better plan. By observing Washington's birthday on the original date, February 11th, as you have explained to us, it would come on a Saturday just preceding Lincoln's birthday which comes on Sunday and is observed on Monday. By observing both these national holidays on a lengthened three-day week-end the breaking up of two weeks will be avoided and be a joy for schools and business.

HAWLEY: What is being done about Easter?

ACHELIS: A stabilized Easter is favored but as this is a religious feast-day it is obviously a question for the churches to decide. April 8th has been mentioned but again that is a matter solely for the church.

HAWLEY: When would The World Calendar go into effect?

ACHELIS: Sunday, December 31, 1944.

HAWLEY: Why that date?

ACHELIS: By considering that day as the extra Saturday holiday, the Year-End Day, the following day could be observed as Sunday, January 1st, in the new World Calendar. Thereby The World Calendar would be adopted on the Year-End Day, the last day of the year 1944, a method approved by astronomers and scientists.

HAWLEY: I should think the calendar would make an excellent topic for study for some women's clubs?

ACHELIS: Yes, it would furnish excellent right-up-to-the-minute material for clubs who stand for worth-while and timely discussions.

HAWLEY: It seems to me that it would be a rather desirable thing to have our time marching in step with the other progressive movements of the age.

ACHELIS: Yes, The World Calendar belongs to a new time and a new age—it is built on the best of the past with the best of the present. When our calendar becomes ordered and harmonious it is possible that it will influence order and harmony also in other directions.

HAWLEY: In fifteen minutes, obviously, it isn't possible to tell the whole story of time—it's too slippery a subject. But if any of you are sufficiently interested to want more of the details about The World Calendar, Miss Achelis has given me some very clear and concise explanatory leaflets which I will send you for the asking. Incidentally, for those of you who live in the vicinity of New York City or expect to be going there for the World's Fair, it will be worth your while to see The World Calendar exhibit in the Museum of Science and Industry in Rockefeller Center.

BECOMING CALENDAR CONSCIOUS

By N. C. Abbott

I AM asked how it happened that I became calendar conscious to the extent of spending hundreds of hours in study, in thought, in writing of articles and in speaking. It is a personal question and the answer must necessarily be liberally sprinkled with the personal pronoun.

In the winter of 1907, then, I was teaching in a High School at Tekamah, Nebraska, my specialty Latin, though I had a class or two in English. There was a group of 20 or more Tenth Grade pupils before me when we came across a date appearing in the publicity campaign of Julius Caesar, writing back to his constituents in the Eternal City. I explained somewhat sketchily and poorly the system of these early Romans and told them how Julius was himself the father of the calendrical system which has come down with various slight modifications, notably those of Augustus and Gregory, to our day.

But my explanation was not very good, and that night after I reached home and was studying over the work for the next day, I started energetically to study the calendar. Briefly—a student's question had started me.

I confess that I was a wee bit ashamed of the class episode. I had failed to explain in a clear manner the Roman system to this inquiring lad and to the others who were listening. I had failed (and this was the most humiliating part) because I was ignorant myself. Cheeks burned as I acknowledged it to myself alone: certainly to no one else. And I recalled a saying of my father's that the greatest crime of a teacher was not to know what the instructor should reasonably be expected to know. But I had promised the class to look up the whole matter of the calendar. And this is what I started to do. This, I found most fascinating.

To go further back. When I was a student in high school a good many years before, I had asked my own teacher about this mystery of a Roman calendar. And again in an earlier Caesar class of mine one of the pupils had raised the question. But this pupil had not been quite so aggressive.

In the years since, I had become interested in *Time* itself and *Man's Measurement of Time.* From the philosophical viewpoint I had asked myself: Is Time actually the fourth dimension properly to be classed with Length, Breadth and Thickness? From the linguistic side, root meanings of such diverse conceptions as we now have in the words *Year, Yore* and *Hour,* originating in the same base, commanded my attention. As to the measurements employed by man in his long trek upward, every unit and device that I could learn about I had studied from cock-crow, burning-rope, hour-glass and notch-cutting.

In my life from 1901 to 1904 in the Orient, largely among the Moros

in southern Mindanao, and in visits to Japan, China and Hawaii, I had brought home to me this thought: Time is universal, but the systems devised for measuring this valuable and intangible element of social life have been most crude, bungling and inadequate for man's needs in many particulars. There had been progress in the gliding centuries; yet man's contrivances are still far from perfection.

Such things had come into my life as these: A Chinese delegation at Cottabato had visited me for permission to withdraw their mestizo children for part of a session to celebrate properly their New Year's Day, to them the beginning of Time. A Moro delegation had once called on me in Zamboanga at the normal school, where I was serving as principal, asking me for a forenoon off to offer prayers to Allah in honor of the escape of the true prophet Mahomet, founder of their faith. The men were dressed on this occasion in war costume and carried great krises which had been freshly sharpened and burnished. Their year started with Hejira.

In addition, I had seen the enormous stone water clock at Canton, China, which had been dripping away the minutes for centuries. Finally, I had experienced the unique sensation in 1901 of going directly from Tuesday to Thursday as our ship steamed westward and of celebrating two Independence Days in succession as our patriotic captain picked up a second consecutive Fourth-of-July on our return from Japan to San Francisco.

All of these experiences had a tendency to make me Time Conscious, if not Calendar Conscious, before the episode which I have related at the beginning of this article, and I naturally began to write and talk about the meters for Time.

After some intensive study on the Roman calendar both before and after its reformation by Julius, as I had promised my class, I started to build a calendar of my own and foolishly conceived the thought that 13 months of four weeks each would make a great improvement. Foolishly, I repeat, since I deemed I was the inventor. I realize now that hundreds, perhaps thousands, had the same idea of reform long before I was born. Perhaps I had picked up the thought somewhere in my reading. It may have lain dormant for months. Then suddenly it flamed into consciousness and I worked out what I called the *Washington Calendar* and took many hours in explaining to anyone who would listen to my plan. Briefly it was the use of a 13th month, to be called *Washington,* and this new member was to follow December.

Each month was to begin on Thursday and end on Wednesday. This provision was inserted by me to avoid end-of-week and end-of-month piling up together. There was an arrangement proposed by intercalating a Year Day at the end of Washington annually and a Leap Day whenever necessary at the end of February to cause the Spring Solstice to fall invariably on March 23d. If one studies this provision carefully it will appear that

there would not be the variation in my proposed calendar of the date in relation to season that there is in the present arrangement.

But the school teacher from a small town in Nebraska, building an improved calendar for a pastime, and helping children figure new dates for their birthdays was not, as I soon learned, the only person considering this vital problem. Up at St. Paul, a group was seriously at work and some publicity of theirs reached me. Their plan of reform differed only in minor respects from what I had worked out.

Then came a change in my own work and while mastering details in the management of a state institution, I had to drop the subject for a time.

The monumental work of George Eastman soon came to my attention. I got into communication with his central office at Rochester, and before long was reading carefully the printed material put out by a corps of assistants gathered about this new protagonist. Mr. Eastman himself was a most cogent, forceful and original writer.

One day there dropped into my office a fine young Seventh Day Adventist minister, an aggressive searcher in history, biology, theology, and psychology. He had been in before several times on matters connected with Nebraska history and we had enjoyed arguments sometimes heated but always friendly. On this occasion he brought with him certain pamphlets and monographs which assailed the whole plans of a reform in our calendar, largely on the basis that it would destroy the Sabbath.

As a sequel he brought more pamphlets and these opened new fields for disagreements. Then he burst in one day with a challenge for a public debate. He would do all the work for the arrangements, he said. So he went ahead. A few weeks later he again came in to report. Plans for the debate had been formulated, but he had been so busy in these preliminaries that he had arranged for a debater to come from Washington, D. C., one who could, as he alleged, make the argument more interesting for the many hundreds who would be sure to buy tickets.

The debate itself was really not very good, though it held the attention of the crowd for an hour. Probably no one was convinced save myself. I went into the argument strongly in favor of the International Fixed Calendar, the form recommended by Mr. Eastman, not much different from my original Washington Calendar, and came out of it fully convinced that it could never be adopted because 13 is a prime number. But various press agencies reported the debate fully and I was kept busy for some time declining invitations to speak on the subject.

Soon thereafter I began a study of the whole question, writing somewhat voluminously and urging that The World Calendar is the final solution. This conclusion has been fortified by the careful reading of *The Journal of Calendar Reform* with its wealth of articles and statistics.

RECENT CALENDAR RESEARCH

Astronomical Viewpoints

By H. H. Baker

Hon. Secretary of New South Wales Branch of British Astronomical Association

From an Official Report which led to the organization of a calendar reform committee by the Australian and New Zealand Association for the Advancement of Science.

ASTRONOMERS are specially interested in methods of measuring and recording time. It is their province to observe the movements of the heavenly bodies, to make exact note of the times and extent of such movements, and incidentally to use this information for regulating mundane calendars and clocks.

Although Julius Caesar has the credit for introducing the Julian calendar, it was only by obtaining the expert advice of the Greek astronomer Sosigenes that he was able to produce the precise results.

Sixteen hundred years later, when Pope Gregory rectified the Julian calendar, he called in two astronomers, Lilius and Clavius, to advise him, and it was their advice that enabled him to put the calendar in the satisfactory condition in which it has been handed down to us.

Similarly when the Christian era was adopted by the Catholic countries in the Sixth Century, it was done on the expert advice of Dionysius, an astronomer.

We are apt to regard our calendar as an established and unalterable thing. It is, however, just a systematic reckoning of time, made by man for man's convenience. There are not only a number of different systems in use, but our own calendar has a long history of change and improvement. Although it has held its own now for several centuries, its current weaknesses are so apparent that there is a large consensus of opinion for another revision.

Societies have been organized in many countries for the purpose of studying the probable effects of revision, for the purpose of interesting the public and for the purpose of securing legislative action. Agitation, discussion and organized effort are necessary, for it has to be recognized that human nature and the customs of centuries being what they are, there is no new form of calendar that will be accepted without the demur that comes from apathy and resistance to change.

Of the many proposals that have been studied by the League of Nations, the one that has been universally approved is called The World Calendar, which provides an equal-quarter year, invariable and perpetual. This plan involves comparatively little change and provides obvious advantages to business interests, science, education and statistics.

It is the plan favored in England and throughout continental Europe, where practically every country has a committee or organization to support its ultimate enactment. It is also widely approved in America, both North and South, where several thousand members of committees and organizations join to promote it.

Scientific organizations are generally agreed that in these days of general education and mathematical precision in calculations and records, the world should no longer allow itself to be handicapped with antiquated inexactitudes. But before this worth-while change can be made, it is necessary that a considerable body of public opinion in each country shall be convinced of the importance and desirability of the reform.

In this matter, the citizens of Australia appear to have lagged. They have less knowledge and consequently less enthusiasm than other nations.

Therefore the formation of a committee or society for informing our people regarding the principles of calendar reform appears to be desirable.

Harmony Within the Year

By Volta Torrey

Associated Press Feature Writer

TEN years ago Elisabeth Achelis heard a lecture on calendars. She had been a New York debutante, a Red Cross worker and a member of the League for Political Education, but until then, calendars, to her, had been things-on-the-wall to glance at and replace every year.

Then she happened to read a Denver man's letter to a daily newspaper. He

advocated a changeless calendar. She talked it up. And now The World Calendar Association, Inc., which she started and still heads, boasts 11,000 members in 58 countries. Fourteen nations have okayed its proposed World Calendar and in 1944, she hopes, all mankind will adopt it.

"I like to think of the year," says Miss Achelis, "as a happy family of time—consisting of the day, week, month, season and quarter—all children of the year. These are active offspring, each laboring in its particular field, yet all coming home together at regular intervals for a happy reunion, four times a year."

Bringing these "children" together harmoniously, she adds, is something that the nations of the world can agree on. And one such agreement between all the world's nations may lead to others, on other questions. So her crusade for The World Calendar, she concludes, really is a movement toward world peace, too.

Surely the Day Will Come

By Dr. Juan V. Montiel

Staff Writer for *El Pueblo*, Buenos Aires

I MUST confess to a certain annoyance that The World Calendar was not put into effect on January 1, 1939. There was no valid reason for not doing it—no reason except inertia.

Over a period of several years I have not found any serious opposition to this reform, or any person who might be offended by it, or anyone whose interests would be damaged by it. All that was lacking was a simple agreement among the nations, so that people everywhere could say in one international chorus: "Let's do it!" This year was the right time, but the occasion passed just like any other New Year's Day, with the customary devotion to gayety, merriment, noise and incomprehensible follies.

Why should the great statesmen of the world evade such an obviously beneficial movement? I suppose the reason is merely that they are immersed in their own selfish aims, and Germany can hardly say to England, "I will agree to calendar reform if you will agree to my occupation of Hungary." Nor can Italy suggest to France, "I agree, provided you give me Tunis."

Even the smallest movement for the benefit of humanity must, it seems, become the butt of international politics.

Suppose we recall the long series of international jealousies which preceded the adoption of Standard Time. A hundred years of bickering—needless and stupid—finally came to an end. And with the final agreement was closed a long chapter of anarchy in connection with the meridians. During the period of anarchy, every nation no matter how unimportant, claimed to have its own meridian, as if this was an integral part of its national sovereignty. Finally reason triumphed: they all stopped using their own meridians, and accepted as their standard the meridian passing through the observatory of Greenwich. The advantages of this reform have been extraordinary. But if we ask any ordinary shopkeeper, tradesman, manufacturer or even schoolmaster, we shall probably find that the reform came without their noticing it.

What do we owe to Standard Time? Only because of it can a man set his watch, wherever he may be, and know that he carries a time which is universal for the whole world, changing in hourly intervals at distances approximating the course of the sun.

Why should we not regularize in similar fashion the dates of the calendar? Why should we not regularize our holidays, national and international? Revision of the calendar is no more difficult than was the adoption of Standard Time, which rapidly became practically universal.

The day will surely come, for unquestionably the orderly administration of the reduced space and the imperceptible time in which we live our little lives, is far more important than the foolish aims on which the dictators and supermen of international politics waste their energies.

Personally, I would like to see the whole world devote its time and effort to reforming the calendar. Such a crusade might serve to quiet the spirit of mischief that is dominating the world and its leaders—those eternal children in whose hands one must continually put a new toy, or in their heads a new preoccupation, for otherwise they think terrible thoughts—and worst of all, after thinking terrible thoughts they start to do equally terrible things.

CURRENT PRESS COMMENT

Many for Monday

Muskegon (Mich.) Chronicle

Judging from the letters from newspaper readers the country over, the majority would like to see the weekday, as well as the month-date, of Thanksgiving changed. They would like to have the holiday observed on Monday, rather than Thursday. Such a change would provide a three-day vacation for millions.

Other than tradition, there seems to be no reason for the Thursday date, which has been observed only since 1863. Why Lincoln selected Thursday nobody knows. Before Lincoln's time there were many Thanksgiving days proclaimed on varying days of the week.

After all, the important thing is not when, but how we observe the day.

Sensible Proposal

Marshfield (Wis.) News-Herald

Thanksgiving should be observed on Monday instead of Thursday, thus giving the nation a double holiday and eliminating the mid-week break.

The suggestion really has merit. Colleges and universities will certainly approve. Thanksgiving Day for them causes a break in the week. The business world will also approve, since the Thursday holiday disrupts their routine.

The Roosevelt decision has turned attention of the American people to calendar reform. That it is needed most people readily admit—but custom and inertia prevent much-needed change. Perhaps Roosevelt has unwittingly set the wheels of calendar reform in motion.

Step in Right Direction

Muncie (Ind.) Press

Changing the date of Thanksgiving is one very small step in the direction of calendar reforms which have long been advocated by business groups, labor organizations and others. It is contended that a more uniform calendar, with the same day of the week always occurring on the same day of the month, would simplify life and permit a more satisfactory arrangement of holidays.

Monday Holidays

Fort Myers (Fla.) News Press

Roosevelt's decision to move Thanksgiving Day up a week has met with the approval of calendar reformers. However, they claim it should be celebrated on Monday instead of Thursday.

Calendar reformers would change holidays to Monday to create long week-ends.

Wide Support Expected

Flemington (N. J.) Democrat

Next year the President will be asked to proclaim Thanksgiving Day on Monday, in order to give the nation the benefit of the extended week-end holiday. The fourth Monday will undoubtedly receive widespread support, because it is three weeks after Armistice Day and four weeks before Christmas.

Debate Is Open

Charleston (S. C.) News-Courier

Moving Thanksgiving Day has improved the opportunity to argue for the proposed reform whereby the holiday would be put on Monday, not Thursday.

The debate over Thanksgiving is open to everybody. The President has no monopoly of power to fix the date, except in the District of Columbia. The states are free to choose a date other than that chosen by the President.

Holiday Changes

Milwaukee (Wis.) Journal

It seems to us that people most enjoy a holiday when it falls on Monday. Why not Independence Day on the first Monday in July? Memorial Day would be an easy change.

Why not revise our holidays if they can be better fitted to human need and happiness?

EXCERPTS AND REVIEWS

Thanksgiving Monday

By C. M. LEARY

THE disadvantages of mid-week holidays were imprinted on my mind at an early age. I had left home and entered the laundry business as a boy. Thanksgiving Day came, and home was 100 miles away, with transportation too slow to permit my taking a one-day mid-week holiday. I had my Thanksgiving dinner in a restaurant where I was almost the only diner, and I was very, very homesick. The years have passed, but never the memory of that lonesome Thanksgiving.

If Thanksgiving Day had come on Monday, I would have been home.

As a matter of fact, all holidays ought to come on Monday.

That is not an original idea with me. Several years ago I heard of an organization that had suggested it, and I immediately began promoting the idea locally and among my business associates.

The more I talked and thought about it, the more enthusiastic I became. In applying it to my own laundry industry, I figured that we would be able to give our employees a 3-day week-end holiday vacation at least five times a year.

In March of this year the Chicago *Tribune* published a letter reviving the idea of Monday holidays, headlining the letter "Why Isn't Something Done About It?" Within a few days, one of the nation-wide Man-in-the-Street radio programs began interviewing the public on the same subject. The ball had started rolling again, and again I started my activities among my friends and business associates.

I want to see Monday holidays tried out.

From an Irish Humorist

A Discussion of Calendar Reform by the Famous Author of "Eden's Gossip Column," in the Cork (Ireland) *Evening Echo*

THAT the calendar needs revising must be obvious to anybody who reads the papers. The calendar has not kept abreast of the times. Whether it is the times that are out of joint or the calendar that is out of date doesn't really matter: over the times and their seasonal or unseasonal aspects people have no control, but the calendar is definitely within the jurisdiction of free democracies as well as totalitarian governments. Revision of the calendar is no new and revolutionary proposition: it has been done quite frequently, and the alterations it has undergone are numerous as those of the Czech frontiers.

For some years the League of Nations discussed and considered proposals for altering the calendar. It was considered a good, safe subject because the calendar is so constituted that it cannot answer back and tell the League, maybe, where the League might go to insure an even all-year-round temperature. But the League couldn't get agreement on its proposals, so last year they were "temporarily abandoned." The League, in its enterprising activities, has become rather addicted to temporary abandonments of one kind or another. As for its calendar proposals, they had a very definite appeal to every democratic feeling and it is regrettable that they did not find unanimous support: one feels almost disposed to risk holding a Munich conference about it.

There is an insidious fact about the length of the year, which quite conceivably you haven't noticed. It has worried thinking people for many generations, and filled them with an uneasy suspicion that they were being victimized, wronged, put upon. According to the wage books that are based on the calendar, there are 52 weeks in the year and seven days in every one of these weeks. That works out at 364 days in the year—or the rules of arithmetic are a fraud, a delusion and a snare. But nobody has cast a doubt on the veracity of arithmetic rules, and the books say that even if there were no Sabbaths, no holidays, no half-days and no sick leaves, the maximum number of days for which wages can be paid in 52 weeks is 364. But the same calendar that works out the year at 52 weeks of seven days each, emphatically declares that there are 365 days in the year—and once every four years there are 366 days. That's why thinking people get worried.

That extra day has eluded the closest

vigilance of all who have tried to pin it down. Employers, when asked about it, look surprised. It has been pointed out firmly to them, sometimes in passionate language, that the calendar produces a day which is not accounted for in the pay sheet.

Now it is scarcely necessary to mention that there is nothing so disturbing to democratic feelings, nothing that makes democrats feel so uneasy, dissatisfied and suspicious, as the suggestion that they have done more work than necessary, and that by some gerrymandering process that they can't locate they've been jostled out of an extra day's wages. This disposition was fully realized by the League of Nations when it took up the whole calendar business, in an effort to restore confidence in the wage books. So the Council of the League gathered around the calendar and deliberated as to how that extra day could be dealt with, without involving any extra payments for overtime. There was no place it could be put, without adding a day to some week, and that was recognized as a cure that would be worse than the disease. The democracies of the world didn't want a day put on the working week, but taken off.

So the League decided that the only way of satisfactorily dealing with the situation was to eliminate the 365th day from the calendar, thus removing a potent cause of suspicion and uneasiness. It all sounded very simple and effective, and everything would have been all right only for the sun and the motions of the earth—matters over which the League has no more control than if they were totalitarian states. It seems that the rotation of the earth on its axis approximates in unalterable character to the Rome-Berlin axis, and is equally unaccommodating towards the desires of the League. While it might be easy to eliminate a day from the printed calendar, nevertheless the day would dawn and insist on going through its 24-hours. In these circumstances it was suggested that this unwanted day be ignored, and refused recognition—the model for the idea was perhaps the League's refusal to recognize the conquest of Manchuria and Abyssinia, or prospectively, China.

In order that the year would be rightly rounded off, and that the quarterly rent wouldn't become a disputable quantity, it was also proposed that the number of days in each month should be equalized.

Altogether it was a very likeable solution. One day of the year was to be regarded as an extra. If a fellow didn't feel inclined to go to work of a morning, here was his opportunity.

However, after a long discussion, the League decided to put calendar reform back on the shelf, where all difficult and important matters are put in Geneva. For the moment, no useful purpose can be served by reflecting on the great benefits the reform would confer: one can only pass from the subject with a poignant appreciation of what might have been.

But the failure of the League to reform the calendar is no reason why something should not be done. The proposed solution was a reasonable one, and unless governments are prepared to stand up and call reason a liar, they ought to take up calendar reform at once.

Rules of Measurement

By Dr. Georg Madelung, Stuttgart, Germany

EVERY reform is good which simplifies the rules of human relations, be it the calendar or other units of time, weight, length, electricity, money, spelling, mathematic formulae and other scientific languages and so on to the rules of national and international law. Most of these rules are unnecessarily complicated and are, thereby, responsible for continuous waste of mental energy. What is yet more deplorable is that the learning of obsolete rules absorbs mental capacities which should better be devoted to real knowledge, and that odd rules are only too apt to hide otherwise obvious correlations and darken the mental picture. It must not be overlooked that all of these rules are nothing but tools. No tool is beyond reform because it was invented 5000 years ago, be it the seven days' week or fire drill, which is still older and perhaps one of the most helpful tools that man has ever thought out. What is really important is not the fire drill but the fire which heats our home, and not the seven days' week but the days of work and rest which we are permitted to live. Let us not waste too many of our few days by the use of obsolete tools.

FROM THE MAIL BAG

Certainly some such change as you suggest would greatly simplify the arrangements incident to the division of work in an academic year.—Tyler Dennett, Pres., Williams College.

The Real Estate Board is very much in sympathy with your effort to reform the calendar and the method proposed is entirely satisfactory to us.—Edward P. Doyle, Dir., Bur. of Public Affairs, Real Estate Board of New York.

I have long known of The World Calendar Assn. and its work. I approve of the end which you are trying to accomplish and hope the day is not too distant when the world may accept so reasonable an adaptation.—Lena M. Phillips, Pres. International Federation of Business and Professional Women, New York City.

As a statistician I am greatly desirous of calendar reform. Comparisons between months like February and March in our present awkward system of measuring time are meaningless.—K. B. Emerson, United Shoe Machinery Corp., Boston.

As a teacher of liturgy and a regular adviser in these parts on the technical details of calendar making, especially the so-called annual Ordo of the Catholic Church, I am seriously interested in your World Calendar. I have followed your *Journal of Calendar Reform*, and have time and again recommended it to the consideration and support of college students and many future Catholic priests. You have every argument in your favor.—Rev. R. Schoenbechler, O.S.B., St. John's Abbey, Collegeville, Minn.

Need for a change in our present calendar is obvious. Your proposal is the best one I have seen yet.—B. C. Hopper, Pres., Hopper Paper Co., Taylorville, Ill.

I am an advocate of The World Calendar.—Robert Westly Peach, Presiding Bishop, Reformed Episcopal Church.

I am heart and soul with you in the matter of calendar reform.—Dr. S. W. Geiser, So. Methodist Univ., Dallas, Tex.

Our present calendar is obsolete and is not built for business and social purposes. —M. C. Le Vine, Honolulu.

Favor 12-months reform.—J. R. Trowbridge, Banker, N. Y. C.

Proposed World Calendar is admirable —a vast improvement over what has been or is.—Prof. C. J. Keyser, Columbia Univ.

The 12-month World Calendar is, by far, the best substitute that I have seen, because it is simple, clear, accurate, convenient and appears free from all practical difficulties. It is serviceable for it equalizes the quarters, stabilizes our time system, and definitely and perpetually fixes our special days. I hope for its speedy and universal adoption.—W. F. Hartranft, Hotel Monterey, Asbury Park, N. J.

I am convinced that The World Calendar is desirable and shall help to bring about its adoption.—C. W. Hunt, Secy., Amer. Assn., Teachers Colleges, Oneonta, N. Y.

Have taken pleasure in cataloging and filing the *Journal*, and bringing it to the attention of readers in our Library.—Dr. T. A. Johnson, Librn., Southern Baptist Theological Seminary, Louisville, Ky.

It seems to me extraordinary that more interest is not displayed in this very important matter. The World Calendar must be adopted sooner or later and the sooner it is adopted the better it will be for all business. This point permits of no discussion.—A. Mackinnon, Horne & Mackinnon, Aberdeen, Scotland.

Being Roman Catholic, I am interested in the proposals concerning Easter and all the religious points.—T. Papatzonis, Dir., Ministry of Finance, Athens.

Trust your effort will prove successful, for business needs a new calendar set-up. —A. Waldo, Merchant, Sharon, Pa.

I would welcome simplification of the calendar as a decided help in facilitating calculation of scientific data.—Prof. L. B. Uichanco, Univ. of Philippines.

The World Calendar is as great an improvement over the Gregorian as the radio is over the first phonograph; or the electric light over tallow candles.—M. J. Spinks, Methodist Hospital, Dallas, Tex.

It is clear to me that we need an equitable distribution of time to meet present conditions.—G. M. Scheer, Eatonton, Ga.

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EDITORIAL PARAGRAPHS

The President's plan is all right as far as it goes, but The World Calendar Association's proposal is to have Thanksgiving Day fall on Monday.—Seattle (Wash.) *Times.*

Historically, days of formal Thanksgiving have migrated not only through the week but up and down the calendar—February, April, May, July and December. Establishment of the day as a regular national holiday waited long. When President Lincoln appointed the last Thursday in November, in 1863, the Civil War was approaching its darkest moments. Perhaps the later continuance was in part a tribute to the martyred President.—New York *Times.*

The President's change in the Thanksgiving date is a step in the direction of calendar reform. A bill to reform the calendar, if made a Roosevelt measure for the next session of Congress, would provoke controversy.—Columbia (S. C.) *Record.*

Now, with everybody conscious about a "new date" for Thanksgiving, may be as good a time as any to remind all and sundry that calendar reform on a really sweeping scale has been sought by influential groups for many years. Our present calendar is very badly out of style.—Louisville *Courier-Journal.*

In changing Thanksgiving Day to Monday, two Mondays in November have been suggested, with the fourth Monday receiving the wider support. This choice falls in well with other American holidays toward the close of the year.—Norfolk *Virginian-Pilot.*

The World Calendar Association proposes Monday as the proper day to be designated for the Thanksgiving holiday. —New Haven (Conn.) *Journal-Courier.*

The proposed choice of the fourth Monday falls in well with other American holidays toward the close of the year. It is the spirit of the observance which matters, not the day on which it is held. If the earlier observance fits in better with the Christmas schedule, the change ought to make Thanksgiving Day even more notable as the holiday most uniquely American.—Chattanooga *Times.*

Changing the date of Thanksgiving is a step toward a more uniform calendar.—Los Angeles *News.*

Roosevelt's proposal to advance the date of Thanksgiving has revived a more general discussion of the need for calendar reform, and a still more daring prediction that mid-week holidays will fade from the picture.—Roanoke (Va.) *World-News.*

Few nations have similar holidays. International reformers have been striving for years to make changes that will insure that all holidays come at week-ends, so there will be no weeks in the year divided by holidays. Everywhere it is recognized that sooner or later some changes must be made to halt the interruption to business that mid-week holidays bring.—Oswego (N. Y.) *Palladium-Times.*

People interested in calendar reform all over the world approve the President's position. They would go even further. They would have the holiday on Monday instead of Thursday, in line with their advocacy of changing all holidays to Monday. We think Monday would be ideal for the Thanksgiving holiday. In fact, we subscribe to the whole plan of calendar reform advocated by The World Calendar Association.—Bristow (Okla.) *Record.*

It is difficult to see any good reason why the Thanksgiving Day holiday should not be observed on Monday.—Morgantown (W. Va.) *Post.*

Calendars are a matter of workability and convenience. A more uniform calendar, with the same day of the week occurring always on the same day of the month, would permit more satisfactory arrangement of holidays. — Hackensack (N. J.) *Record.*

Next year the President will be asked by prominent organizations and individuals to proclaim Thanksgiving Day on Monday.—Mason City (Iowa) *Globe-Gazette.*

FEB 28 1940



After reading please pass on to others.

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Journal of CALENDAR REFORM

FOURTH QUARTER

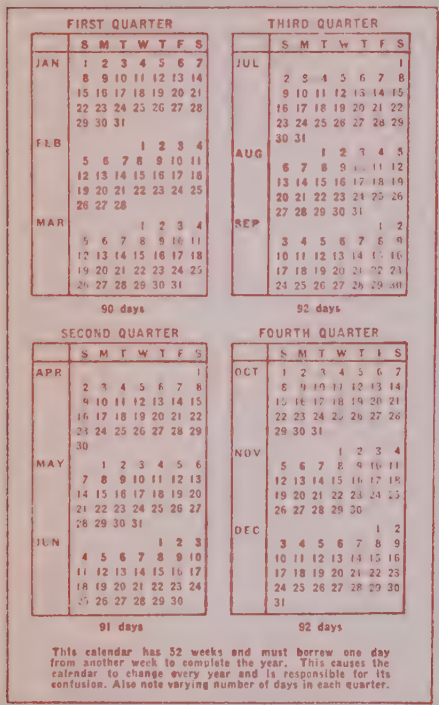
1939

1939

PRESENT GREGORIAN CALENDAR

PROPOSED WORLD CALENDAR

In 1939 both calendars begin the year with Sunday, January 1st.



PRESENT GREGORIAN CALENDAR

FIRST QUARTER

	S	M	T	W	T	F	S
JAN	1	2	3	4	5	6	7
	8	9	10	11	12	13	14
	15	16	17	18	19	20	21
	22	23	24	25	26	27	28
	29	30	31				
FEB				1	2	3	4
	5	6	7	8	9	10	11
	12	13	14	15	16	17	18
	19	20	21	22	23	24	25
	26	27	28				
MAR				1	2	3	4
	5	6	7	8	9	10	11
	12	13	14	15	16	17	18
	19	20	21	22	23	24	25
	26	27	28	29	30	31	

90 days

THIRD QUARTER

	S	M	T	W	T	F	S
JUL							1
	2	3	4	5	6	7	8
	9	10	11	12	13	14	15
	16	17	18	19	20	21	22
	23	24	25	26	27	28	29
	30	31					
AUG			1	2	3	4	5
	6	7	8	9	10	11	12
	13	14	15	16	17	18	19
	20	21	22	23	24	25	26
	27	28	29	30	31		
SEP						1	2
	3	4	5	6	7	8	9
	10	11	12	13	14	15	16
	17	18	19	20	21	22	23
	24	25	26	27	28	29	30

92 days

SECOND QUARTER

	S	M	T	W	T	F	S
APR							1
	2	3	4	5	6	7	8
	9	10	11	12	13	14	15
	16	17	18	19	20	21	22
	23	24	25	26	27	28	29
	30						
MAY		1	2	3	4	5	6
	7	8	9	10	11	12	13
	14	15	16	17	18	19	20
	21	22	23	24	25	26	27
	28	29	30	31			
JUN					1	2	3
	4	5	6	7	8	9	10
	11	12	13	14	15	16	17
	18	19	20	21	22	23	24
	25	26	27	28	29	30	

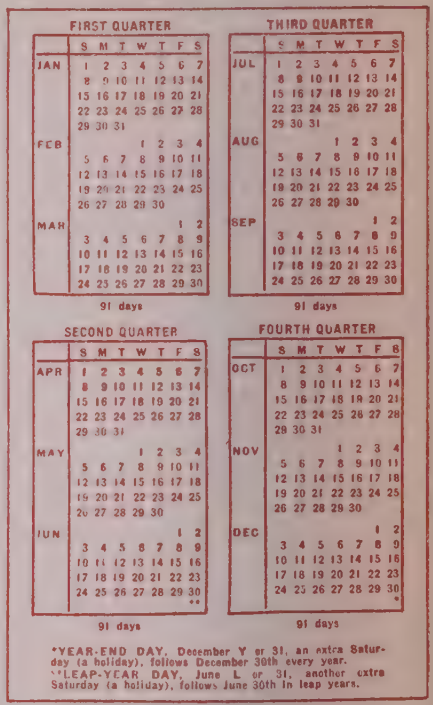
91 days

FOURTH QUARTER

	S	M	T	W	T	F	S
OCT	1	2	3	4	5	6	7
	8	9	10	11	12	13	14
	15	16	17	18	19	20	21
	22	23	24	25	26	27	28
	29	30	31				
NOV				1	2	3	4
	5	6	7	8	9	10	11
	12	13	14	15	16	17	18
	19	20	21	22	23	24	25
	26	27	28	29	30		
DEC						1	2
	3	4	5	6	7	8	9
	10	11	12	13	14	15	16
	17	18	19	20	21	22	23
	24	25	26	27	28	29	30
	31						

92 days

This calendar has 52 weeks and must borrow one day from another week to complete the year. This causes the calendar to change every year and is responsible for its confusion. Also note varying number of days in each quarter.



PROPOSED WORLD CALENDAR

FIRST QUARTER

	S	M	T	W	T	F	S
JAN	1	2	3	4	5	6	7
	8	9	10	11	12	13	14
	15	16	17	18	19	20	21
	22	23	24	25	26	27	28
	29	30	31				
FEB				1	2	3	4
	5	6	7	8	9	10	11
	12	13	14	15	16	17	18
	19	20	21	22	23	24	25
	26	27	28	29	30		
MAR						1	2
	3	4	5	6	7	8	9
	10	11	12	13	14	15	16
	17	18	19	20	21	22	23
	24	25	26	27	28	29	30

91 days

THIRD QUARTER

	S	M	T	W	T	F	S
JUL	1	2	3	4	5	6	7
	8	9	10	11	12	13	14
	15	16	17	18	19	20	21
	22	23	24	25	26	27	28
	29	30	31				
AUG				1	2	3	4
	5	6	7	8	9	10	11
	12	13	14	15	16	17	18
	19	20	21	22	23	24	25
	26	27	28	29	30		
SEP						1	2
	3	4	5	6	7	8	9
	10	11	12	13	14	15	16
	17	18	19	20	21	22	23
	24	25	26	27	28	29	30

91 days

SECOND QUARTER

	S	M	T	W	T	F	S
APR	1	2	3	4	5	6	7
	8	9	10	11	12	13	14
	15	16	17	18	19	20	21
	22	23	24	25	26	27	28
	29	30	31				
MAY				1	2	3	4
	5	6	7	8	9	10	11
	12	13	14	15	16	17	18
	19	20	21	22	23	24	25
	26	27	28	29	30		
JUN						1	2
	3	4	5	6	7	8	9
	10	11	12	13	14	15	16
	17	18	19	20	21	22	23
	24	25	26	27	28	29	30
							**

91 days

FOURTH QUARTER

	S	M	T	W	T	F	S
OCT	1	2	3	4	5	6	7
	8	9	10	11	12	13	14
	15	16	17	18	19	20	21
	22	23	24	25	26	27	28
	29	30	31				
NOV				1	2	3	4
	5	6	7	8	9	10	11
	12	13	14	15	16	17	18
	19	20	21	22	23	24	25
	26	27	28	29	30		
DEC						1	2
	3	4	5	6	7	8	9
	10	11	12	13	14	15	16
	17	18	19	20	21	22	23
	24	25	26	27	28	29	30
							*

91 days

*YEAR-END DAY, December Y or 31, an extra Saturday (a holiday), follows December 30th every year.
**LEAP-YEAR DAY, June L or 31, another extra Saturday (a holiday), follows June 30th in leap years.

EACH YEAR DIFFERENT

This calendar is always different from year to year.

The quarters are unequal in length.

Each quarter begins and ends on a different day of the week.

Each month begins and ends on a different weekday.

The months have a varying number of weekdays.

Each year begins on a different weekday.

This calendar is unbalanced in structure, unstable in form, and irregular in arrangement.

SOON YOU WILL BE DISCARDING THIS OBSOLETE CALENDAR.

EACH YEAR THE SAME

This calendar bears no year-date and is good for every year.

The quarters are equal in length.

Each quarter begins on Sunday and ends on Saturday, contains 3 months—13 weeks—91 days.

Month-dates always fall on the same weekdays. Each month has 26 weekdays—plus Sundays.

Each year begins on Sunday.

Year-End Day and Leap-Year Day are international holidays.

This revised calendar is balanced in structure, perpetual in form, harmonious in arrangement.

SOON YOU WILL BE USING THIS UP-TO-DATE CALENDAR.

DR. ISMAEL GAJARDO REYES

1876-1939

A great world leader in calendar reform, Dr. Gajardo Reyes was the founder of the Latin American Committee for The World Calendar, through which he directed the activities of 15 national calendar reform committees, covering all the countries of Latin America. No block of national committees has been more powerful in the development of an international consciousness of the practical possibilities of a revised calendar. Since 1934, Dr. Gajardo Reyes had devoted most of his time and tireless energy to calendar reform.



Dr. Ismael Gajardo Reyes

President of the Latin American Committee for The World Calendar
died October 24, 1939, at Santiago, Chile

(See Memoir on Page 167)

LET US ENCOMPASS THE EARTH WITH A NEW ORDER OF TIME

VOL. IX FOURTH QUARTER 1939 No. 4

THE possibility of a union or federation of nations, as expressed in the widely-read book, *Union Now*, by Clarence Streit, is receiving serious attention by thoughtful men and women. There exists a clear analogy between the ideal of a federation of States and the practical proposal for a federation of Time, as embodied in The World Calendar.

This improved calendar is a federation of separate sovereign and independent time-units. In this plan, the days are independent and equal in the performance of their separate duties, yet they are an integral part of the weeks, months and quarters. The weeks are sovereign in their own domain, yet they form a part of a larger unit, the month. The months, distinct and free in their own right, merge into the complete year. The year evenly divided into quarters, contains within its framework all these various and independent calendar segments. The Year-End Day, keystone of this harmonious federation, makes possible the stabilization of the year, and, in a larger sense, dedicated as a world-holiday, would serve to bring greater understanding and unity to all peoples and nations. Thus the complete World Calendar year, containing all these separate and independent time-units, is an ordered and harmonious, balanced and perpetual, federation of Time. No single time-unit interferes with another. None is superior to another. None aggressively takes from another. None imposes upon another nor transgresses outside its natural field.

It is confidently believed that notwithstanding present international turmoils an opportunity will arise to obtain international agreement on this federation of Time.

This calendar, separated as it is from controversial political subjects, might thus well be made an example of international cooperation and unity —an example leading to other and wider applications of this same peace-producing procedure. The adjustments in The World Calendar are simple; the agreement already substantially world-wide; the subject non-political; and the machinery easy. As an avenue toward peace and reconciliation, The World Calendar may well play an important part.

THE EDITORS.

Journal of

CALENDAR REFORM

October, November, December

1939

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APOCALYPSE AND THE CALENDAR

By CHARLES FRANCIS POTTER

IN THE last book of the Christian Bible, known among Protestants as "Revelation," and by Roman Catholics as "The Apocalypse," the final two chapters contain the vision of John on Patmos who saw the new Jerusalem, a city foursquare, coming down out of heaven, with twelve gates of pearl and twelve foundations of precious stones. The nations should walk in the light of it and in it was the tree of life bearing twelve kinds of fruit each month "and the leaves of the tree were for the healing of the nations."

This Apocalypse or Book of Revelation has been subjected to many different interpretations during Christian history because of its mystic and symbolic character. Some scholars say that its veiled language was due to the fact that it was written during a period of severe persecution of the early Christian Church and that there are concealed under its vivid symbols references to Nero and Rome. Other Christians devoutly believe that it is a description of the approaching end of the world, and there are those who today are interpreting its symbols as signs of our own time, and who find references in it to the wars and rumors of wars and an imminent Armageddon.

I am not presuming in this paper to judge which, if any, of these interpretations are correct, but I do wish to point out that the various symbols and figures are strikingly suggestive of the astronomical data upon which The World Calendar is based.

I am not quite so naive as to think that John on Patmos foresaw and predicted The World Calendar, but I do think that he and the other apocalyptic writers yearned to bring into confused human affairs the order of the heavenly bodies. When they wrote of a new heaven on a new earth, and especially when John envisioned a perfect foursquare city coming down out of heaven to the earth, the idea or hope was remarkably similar to what is in the mind today of those of us who are enthusiastic about the foursquare World Calendar.

We believe that the order and symmetry of the proposed calendar of four equal quarters, together with the elimination of the many irregularities of the present calendar, plus the introduction of a year-end day which may be used as an international holiday dedicated to a better world understanding, will indeed make it a calendar foursquare which will contribute to the healing of the nations.

If all the people on this planet can agree to order their affairs and regulate their comings and goings according to a common perfected World

Calendar based on the very motions of that planet and its related heavenly bodies, that would be, quite literally, "a little bit of heaven on earth."

Moreover, since we are all very truly the children of this earth, sprung from her loins through countless generations, and since, in our better moments, our eyes turn in wonder and aspiration to the suns and planets and stars whose motions affect their sister-star, the earth, we must recognize that an accurate well-balanced calendar is much more than a convenient method of reckoning time. It is also a means of bringing us into harmony with the universe. It puts us in tune with the infinite. And when we are *en rapport* with the universe we are much more likely to live in harmony with our fellow-men.

Now, I do not belong to that gullible group of believers in the sort of astrology which foretells your future on a magic chart bought in a five-and-ten-cent store, for I agree with Shakespeare in the famous Dear Brutus speech—"The fault, dear Brutus, is not in our stars, but in ourselves, that we are underlings." But I also believe that if we get in tune with the universe in every possible way we are less likely to be underlings. If we are sustained in our daily living by frequent reminders of the symmetry and beauty and harmony of the celestial order, we shall find peace and rest unto our souls.

Biologically, we are children of the earth, and psychologically we are controlled by astronomical changes more than we know. Not merely do the procession of the seasons and the phases of the moon affect us, but the very alternation of day and night, of sunshine and shadow, influences our moods and even our thoughts.

That being true, how important it is that the calendar by which we reckon our days, weeks, months, seasons, and years should accurately reflect the order and harmony of sun, moon, and star! Our minds are so sensitive to shock and so disturbed by any confusion that, for instance, the sudden jumping, in our present calendar, from the 28th of February to the 1st of March (or from the 29th in Leap Year), when all the other months have at least 30 days, is an annoyance conducing to irritability. If I were an astrologer, I should say, not "Beware the Ides of March," but "Beware the end of February. It is a time of mental confusion."

I am not saying that the acceptance of The World Calendar by the nations of the world will solve all human problems. But I am saying that it would be a step toward peace and harmony in a world now torn by wars between nations and conflicts between ideologies. If we got together on a calendar, we might then get together on other matters—coinage, measuring and weighing systems, and even economic matters. Gradually there would be realized the vision of John on Patmos of a new world of order and beauty, reflecting the harmony of heaven.

Scholars are not agreed as to the identity of the "John" who was the

author of the Book of Revelation, but whether or not he was the same beloved disciple who leaned on Jesus' breast at the Last Supper, or some other John altogether, the interesting fact remains that he was calendar-conscious, as a rereading of the book will easily prove to anyone.

All through that Apocalypse you find symbols and references and figures reminding you of the calendar. Three significant numbers are mentioned again and again. Four occurs sixteen times; seven, eighteen times; and twelve, twenty-one times. And of course one thinks of the four seasons, the seven days of the week and the twelve months of the year.

Sun and moon, day and night, heaven and earth are mentioned, and even a meteor, called a star that fell from heaven, showing the constant awareness of astronomical phenomena which filled the mind of John. Revelation 9:15 refers to "an hour, and a day, and a month, and a year," and 12:14 speaks of "a time, and times, and half a time," revealing that the author was very much interested in time-measurement.

It has been remarked by one student of the book that so conscious of the movements of the sun, moon, planets, and constellations was the author of Revelation, that the very character of the literary structure of the composition was affected, so that "the scene shown goes round and round, like the heavenly bodies."

Additional confirmation of our thesis that the author of the Apocalypse was calendar-conscious is afforded by twentieth-century research in the language of the book. Professor Franz Boll, in 1914, was the first to prove that some of the symbols and images which have for centuries puzzled Bible commentators on the Book of Revelation have their origin in first-century Graeco-Roman astrological ideas. And we must remember that the astrology of that day was really their astronomy.

For instance, the reference in the 12th chapter to the "woman clothed with the sun, and the moon under her feet, and upon her head a crown of twelve stars" has long been misunderstood by Bible readers. Although she was described in the first verse as "a great wonder (or sign) in heaven," it was Professor Boll who first pointed out that the constellation Virgo, or The Virgin, evidently was meant.

In the third verse of that chapter "another wonder in heaven" is mentioned, "a great red dragon, having seven heads and ten horns," which is obviously the constellation Hydra, which is below Virgo in the sky.

Similarly, in chapter 6, verse 9, there is mention of an altar under which are the "souls of them that were slain," that is, the martyrs. Now, although it has been well-known to scholars that the Stoics considered the Milky Way to be the happy heavenly home of good people, it remained for Professor Boll to identify the "altar" with the constellation Ara in the Milky Way.

So the whole book is replete with heavenly symbolism. It becomes evident, for instance, that the message John is conveying in the twelfth chap-

ter, when he tells of the sun-clothed woman bringing forth "a man child" while the dragon waited to devour the baby, is that the very heavens picture the birth of the Messiah while the Evil One waits to destroy him, even as Herod tried to kill the new-born Jesus.

The last book of the Bible is not the only apocalypse. The Book of Daniel in the Old Testament and "The Little Apocalypse" in the 13th chapter of Mark's gospel are well known. There are also two books, not so well known, which were evidently in the Bible used by Jesus and Paul, for they quote from them. I refer to the pseudepigraphical books known to scholars as Ethiopic Enoch and Slavonic Enoch.

All these apocalypses are filled with references to astronomy and the calendar. Slavonic Enoch, written during the life-time of Jesus, even mentions the 365¼-day year. So far as I know, no scholar has yet pointed out the relation of apocalypses to the calendar, but it is a fruitful field for study. Why did these ancient men who, in times of persecution and suffering, wrote in apocalyptical imagery of their visions of the future, take such a fascinated interest in astronomy, time, and the calendar?

I am inclined to think it was because they wished to bring the orderly and beautiful heavens into a healing relation to the chaos and confusion of their world. The earth was out of step with the universe, and men like John of Patmos were trying to get it back into its proper orderly condition.

When John envisioned the foursquare city with its twelve gates coming down out of heaven to the troubled earth, that was his symbolic way of expressing his desire to have the order and perfection and beauty of the heavens brought down into the affairs of men on earth. The very Greek word he used, which we read as "foursquare," was "tetragonos," from the verb, "tetragonio," an astrological term meaning "to stand in square with, or to agree with." Certain planets "agreed with" other planets. So "tetragonos," which originally meant "four-angled," came to mean, in common usage, "complete" or "perfect."

It was the perfection of heaven which John desired to see on earth. Men of vision still look at the skies with longing, wishing to bring the perfection of this beauty into their daily lives. That is not mere wishful thinking—not a vain Utopian hope. It will take long, patient years to improve and perfect our confused and quarreling world, but there are certain practical measures which we can take toward that end.

I, for one, am inclined to think that the modern counterpart of John's foursquare city with the twelve gates coming down out of heaven, having in it the tree of life whose leaves were for the healing of the nations, is to be found in the foursquare World Calendar, with its four equal quarters and twelve balanced months and its Year-End Day which may be devoted to international peace, understanding, and good-will, and thus will contribute to sanity and order in world affairs, and help to heal the nations.

DR. ISMAEL GAJARDO REYES

By CHARLES C. SUTTER

Director, The World Calendar Association

IN the death of Dr. Ismael Gajardo Reyes at Santiago, Chile, on October 24, the cause of calendar reform loses one of its great world leaders.

He was the founder of the Latin-American Committee for The World Calendar, and had been its President since its organization in 1934. Through this committee he directed the activities of national calendar reform organizations in Argentina, Bolivia, Brazil, Chile, Colombia, Costa Rica, Cuba, Dominican Republic, Ecuador, Mexico, Panama, Paraguay, Peru, Uruguay and Venezuela. No block of national committees has been more powerful in the development of an international consciousness of the practical possibilities of a revised calendar.

It was through the tireless leadership of Dr. Gajardo Reyes that the Chilean Government in 1937 placed a "draft convention" on calendar reform before the League of Nations, a project which in due course was submitted to all member and non-member nations for their comment and approval.

Both before the League of Nations and the Labor Conference of American States, Dr. Gajardo Reyes was able to present a solid Latin-American front of support for calendar reform whenever the subject came up.

His coordinating committee for Latin America had as honorary presidents Dr. L. S. Rowe, Director General of the Pan American Union, and H. E., Dr. Alfredo de Castro, Uruguayan diplomat and Vice-Chairman of the League of Nations' Advisory and Technical Committee on Communications and Transit and don Gaston Goyeneche, eminent Chilean industrialist.

He also commanded the support throughout Latin America of Roman Catholic opinion. In 1935 it was the privilege of the present writer to accompany Dr. Gajardo Reyes on a tour of many of the 15 countries represented on his committee. He made this tour as the authorized representative of the Chilean Government. "My tour," he announced, "is undertaken for two reasons: first, to learn the official opinion of the Governments; second, to ascertain more definitely the opinion of the Roman Catholic Church."

In both respects he was able to reach clear conclusions. The Governments gave him full support. From the Church, too, he returned with definitely favorable interest. "All the clergy with whom I discussed the matter were in favor of The World Calendar," he reported, "and a similar result came from my visits to the great Catholic universities. There can be no doubt that the attitude of the Church is every day more favorable to this plan. Most of our Latin-American committees on calendar reform, in

the principal countries, include on their active membership prominent representatives of the Church."

It was in the early part of 1934 that Dr. Gajardo Reyes formed the "Comite Latino-Americano del Calendario Mundial," with headquarters in Santiago. As a nucleus he already had a national Chilean committee under the presidency of the eminent Salesian priest, the Reverend Father Valentin Panzarasa. The Chilean Government had ordered an official study of the subject, and the study resulted in the following report, sent by Dr. Alejandro Serani, Minister of Labor, to the Ministry of Foreign Relations:

"This Ministry finds this reform [the 12-month equal-quarter calendar] of such manifest convenience, both for commercial life and business, as well as for the welfare of the working class, that it represents an advantage of great benefit to all nations. In consideration of these facts, this Department has the honor to request the Ministry of Foreign Relations to recommend this project to the consideration of the League of Nations, issuing instructions for the Chilean Delegation in Geneva to favor this project before the League." This report resulted in official action by Chile, approving calendar reform and the 12-month equal-quarter plan.

With this progress in Chile, other Latin-American States began to show interest. Voluntary organizations, for study and promotion, began to be formed. Brazil organized a calendar reform committee under the chairmanship of Captain Radler de Aquino, world-famous authority on navigation. Bolivia organized a committee under the presidency of Senor Moises Santivanez of the Bolivian State Department. Panama organized one under Senor Octavio Mendez Pereira. A Costa Rican committee included representatives of the four sister republics of Central America—Guatemala, Honduras, El Salvador and Nicaragua. Later, Uruguay organized a committee which embraced also representation from Paraguay. Colombia, Argentina, Mexico and Peru soon followed suit, and last year also Venezuela, Cuba, the Dominican Republic and Ecuador.

All these activities were linked together and coordinated by the central committee under Dr. Gajardo Reyes. During his 1935 tour, he proceeded in leisurely fashion from country to country, holding conferences with the local committees and with interested groups, addressing audiences at the leading universities, discussing the subject with press conferences, and delivering a number of effective speeches over important radio hook-ups.

Some months after this tour, Dr. Gajardo Reyes revisited many of his committees and delivered lectures on the need for The World Calendar before learned societies in Buenos Aires and Montevideo. President Terra of Uruguay received Dr. Gajardo Reyes and gave him his official support of The World Calendar.

Dr. Gajardo Reyes was born in Valparaiso on September 29, 1876. At the age of ten, he entered the Government Naval School, graduating in

1892. For the next ten years he served in various capacities in the Chilean navy. In 1902, while in command of the "Huemul," he explored the western shore of the Gulf of Skyring (Straits of Magellan) and discovered the channel which connects that estuary with the Gulf of Xaultegua. This channel now bears his name on all maps. An account of his voyage is contained in the *Encyclopedia Espasa.*

Returning from this voyage, he was made Director of the Navy's Office of Technical Information, which he held until he retired from active service in 1910, with the rank of Captain. As a retired naval officer, he was assigned to educational work, becoming Professor of Naval Tactics in the Santiago War Academy. He was also appointed government seismologist, and in 1914 became Assistant Director of the National Observatory.

For 12 years he published the *Annual* of the National Astronomical Observatory. In 1917 he completed his *Modern Physical Geography*, which ever since has been the standard textbook in Chilean schools. In 1923 he became Director of the National Observatory, in which post he carried on scientific work which won him scientific and educational honors from many countries. As a popular science writer, he was a prolific contributor to magazines and newspapers, both at home and abroad.

Beginning in 1934, he devoted most of his time and energy to the promotion of calendar reform. He was in constant touch with all his Latin-American collaborators, and also with calendar authorities in Spain, Geneva, France, Italy and England. In the continuing work of the committees which he organized throughout Latin America, there exists a monument to him, more enduring than bronze, a monument which assures his name being forever linked with the progress and history of the calendar as an international standard for the measurement and recording of time.

OBITUARY NOTES

HIROSI SAITO, who died in Washington, D. C., at the age of 52, was the youngest Ambassador ever to represent Japan in the United States. His interest in calendar reform was manifested soon after his arrival in this country, culminating in a signed statement issued as an introductory note to an article by Prof. Ernest W. Clement (published in the Journal of Calendar Reform, 1934). In this statement the Japanese diplomat said: "The reason for Japan's willingness to consider the 12-month proposal for calendar reform is so clearly and ably expressed by Dr. Clement that I need add nothing further. We are fortunate in having a Western scholar whose sympathy and understanding transcend the racial barriers."

LOUIS CARROLL ROOT, New York investment banker, who died in his home at Spencer, N. Y., at the age of 70, had been a member of The World Calendar Association since 1932. For nearly seven years he had been actively interested in its work, both in America and in Europe.

WILLIAM P. GEST had been a member of The World Calendar Association for several years prior to his death in Philadelphia, and had been influential in promoting calendar reform among American bankers. He was the Chairman of the Board of Directors of the Fidelity-Philadelphia Trust Company.

THAT THANKSGIVING TANGLE

By GEORGE KENT

(From *Radio Guide*, November, 1939, Chicago)

WHEN President Roosevelt suggested some months ago that we celebrate Thanksgiving November 23 instead of November 30, as scheduled, he tossed a bomb that exploded under the nose of every man, woman and child in the land. For the calendar is a homely, daily document, and anything that affects it affects everybody, be he ever so humble.

The result of the President's suggestion is a nation split in two. Twenty-three states, including the stand-pat New England states, celebrated the holiday on the last Thursday in November as per tradition. Twenty-two others honored the day on the twenty-third. And three others straddled, holding celebrations on both days.

Radio schedules woven around all-important Thanksgiving sports events were knocked into a cocked hat, and moguls of the air waves were seen rending their hair and muttering cuss words in their beer. *When is Thanksgiving?* they wanted to know. Railroad time-tables, college-vacation arrangements, and a thousand business and festive plans were torpedoed by a mere shift of seven days in the calendar.

Which brings us to one of the important women of our time, a wisp of a lady named Elisabeth Achelis, who for the past ten years has been fighting to change the calendar. Like a good housewife, she feels that a calendar should be a tidy, regular procession of dates. We shouldn't have to recite, "Thirty days hath September, April, June and November . . .," to find out the number of days in a month. She would also like to see all holidays fall on a Monday so that we-uns could get two to three days in a row and a real binge or a real rest, whatever the temperament.

As to the pother about the new Thanksgiving date, she says, in effect, *What's the shooting about?* And she produces a few facts that I am setting down for your astonishment.

The first Thanksgiving, back in 1620, was held on December 9, 1620, and it was a Saturday. The following year it took place on a Friday and the date was November 9. Once it was celebrated on July 30, another time in February. Moreover, it wasn't signalized every year. And what is more, there were folks among the Pilgrims who wanted the celebration to be a day of prayer and fasting. At Valley Forge, George Washington proclaimed a day of Thanksgiving on May 7, 1778.

Well, the day was celebrated, on and off, on days in every calendar month, all through the seventeen-hundreds, and then people well-nigh forgot about it. And then a woman named Sarah Josepha Hale, editor of a fashion magazine named *Godey's Lady's Book*, began agitating for a fixed

and permanent Thanksgiving Day. For 47 years she worked on the idea without results, and then in 1863 she wrote her final editorial on the subject. The editorial got to the eyes of Abraham Lincoln, and he, proclaimed Thanksgiving Day as we now celebrate the occasion.

So you see there's nothing very traditional about the last Thursday of November as a day of giving thanks. Miss Achelis, however, was pleased with the excitement Mr. Roosevelt's proclamation had caused, in that it showed that the public was not indifferent to the calendar.

Her plan for a reform has been approved by some 14 countries, and, but for the war, plans would be under way right now for an international convention to put it into effect. It is an exceedingly simple plan.

In a word, it involves the shifting of seven days. February would have 30 days, March 30, April 31, May 30, August 30, and December 30. A glance at the calendar will give you the idea. Each quarter-year begins on a Sunday and ends on a Saturday. So too the year. And each quarter, moreover, has exactly 91 days.

This makes a year of 364 days. The 365th day is an intercalary day, which is one without a number or a weekday name. It is simply a 24-hour period that is taken out of the parade of days.

The great advantage of this last day of the year is that the calendar becomes fixed permanently. It cannot change. No one will have to buy a new calendar every year. It will be possible to memorize it, like a multiplication table. There will be no searching on the pad of dates to find out what day Christmas falls on or what day baby's birthday comes. All anniversaries and holidays will be set once and for all time.

And while this is being done, the advocates of calendar reform, among them Miss Achelis, propose that all holidays not linked sentimentally with a birth-date be celebrated on a Monday. Election Day on a Monday would give the citizens a respite from campaign addresses, except those that the radio would send into their homes, and so they would have time to consider issues and men in tranquillity. Memorial Day likewise would always be on a Monday. The same could be done for all state holidays. Thanksgiving would be the fourth Monday in November.

There are many other advantages. The quarterly tax payments now required on March 15, June 15, etc., would in The World Calendar fall always on a Friday. What better day for facing that painful business than the one on which most people collect wages or total up the week's receipts?

Women are profoundly interested in the subject. Last May, after two years of study, the General Federation of Women's Clubs adopted calendar reform as one of its four principal objectives. The fact that Christmas would always fall on a Monday impressed many of the voters.

The headaches that go with the irregularity of the present calendar would be entirely eliminated. School vacations will fall on the same days,

year after year, sports schedules will be fixed once and for all. The planning of club programs much simplified. Week-ends will be longer.

Business men have long demanded a greater degree of stability in the calendar. In the building industry, our sloppy system of reckoning time costs builders and contractors millions of dollars each year.

Chambers of commerce, statistical and engineering groups, and most church organizations are definitely in favor of the new calendar. The churches approve because it is a device which will, once and for all time, nail down the wandering Easter. The League of Nations was contemplating a call to an international convention shortly before war was declared.

We all look at the calendar daily at least once. How many of us know the reason back of it—how this conglomeration of days came into being?

Briefly, it is a record of the time it takes for the world to make a circuit of the sun, which requires exactly 365 days, five hours, 48 minutes, 46 seconds. Our year—page Mr. Ripley—is off by 29 seconds. But this isn't much of an error.

Our calendar was worked out by Pope Gregory back in 1582 and it wasn't adopted by Britain until 1752. Until that date, England and its American colonies went by the Julian calendar. George Washington was born under this old calendar, so his actual birthday is February 11 by his system of reckoning and not February 22, which we usually celebrate.

The world is full of peoples and countries who still count days by the moon. Right here in the United States the Jews, Mohammedans and a score of other peoples go along by moon calendars, which have a way of getting out of line. This is because the moon, as a means of reckoning time, is inaccurate and not too closely related to the march of the seasons.

Mark Hawley, MBS news commentator, in a jocular mood figured the other day that our present calendar, however much it has improved over the ancient calendars, costs the taxpayers $607 an hour. He said:

"Let me ask you a simple question: What day falls on the 18th of next month? How long has it taken you to arrive at the correct answer? Unless you have a calendar within reach or your wife's birthday happens to fall on that date, I defy you to give an immediate answer. Instead you say, 'This being the 12th, let me see—30 days has September, April, June, etc. That gives us 31 days—hmmmmm—this is Sunday—next Sunday would be the 19th—the following Sunday the 26th—hmmm—the first falls on Tuesday—8th—15th—hmm—22d minus four—oh yes, the 18th—a Friday.'

"In terms of radio copy these lines would consume 30 seconds of air time. Give the average person one minute to do the problem. Assume that half the population of New York alone worked at it once a day—58,333 hours daily, or 7,291 working days, or 26 years of work for one man. At 25 cents an hour he would receive $14,583.25. This for one day's calendar maundering in one city of the U. S. A."

SCIENCE PRESENTS TIME

By Robert P. Shaw

Director, New York Museum of Science and Industry

BY THE TIME this article appears in print, close to half a million people from all over the globe will have viewed The World Calendar exhibit in the New York Museum of Science and Industry in Rockefeller Center.

Since the middle of last January, when the exhibit was installed, a constant stream of men, women, and children have stood and watched with absorbed attention as the colorful, continuously changing panorama of displays that make up the exhibit as a whole unfold, step by step, the arresting message they were designed to carry to the public.

It takes eight minutes for the panoramic cycle of the exhibit to complete itself. In that time, while the visitor watches, a series of transparent pictures is presented to his eye, reviewing in sequence the five different calendars which man has worked out for the measurement of time from the year 4236 B. C. up to the present. In conclusion, a sixth calendar is presented, the proposed World Calendar which revises the calendar we now use to provide a more uniform and coordinated arrangement of the various time-divisions.

These pictures appear in the center of the exhibit itself, which is divided into upper and lower sections. In the lower section the individual calendars are shown one after the other in succession, beginning with that of the ancient Egyptians. Next comes the calendar adapted by Julius Caesar from this Egyptian system, known as the Julian calendar; then the Augustan calendar, the calendar of Constantine the Great, the Gregorian calendar, which we now use, and finally, The World Calendar. Each of the calendars remains in place for a minute or two while in a semicircular aperture above are shown colored pictures and text explaining and describing each one, the circumstances of its adoption, and its changes over its predecessor.

On panels at left and right of this central section of the exhibit are, respectively, enlarged static versions of our current calendar and The World Calendar.

To see the complete series of pictures requires, as has been said above, about eight minutes. But a single revolution of the cycle rarely satisfies the average visitor. He wants to see it go round again. And, often, still another time. And the longer he stands and watches, the better everybody likes it, because the amount of attention paid to any exhibit by our friend, the average visitor, is the only method by which a Museum, or any other

form of exhibition, can judge how successfully the message is presented.

Moreover, there is often a third reason why this visitor of ours waits to see a display make its rounds more than once. Not only is he intrigued by the story it tells him, and held by the lively interest of the show it puts on in telling that story, but he likes to try and figure out the mechanics, or technique of that story-telling. In other words, he is curious to know just how the wheels go around in the part of the exhibit he can't see, to produce the effects that he sees before his eyes. Suppose then, we take him behind the scenes and give him a backstage glimpse of the exhibit, explaining the ideas and materials that went into its making.

First we will unlock a little, inconspicuous door at one side and let ourselves in behind the structure. Here we are at once confronted by what looks to the amateur like a bewildering confusion of moving chains, sprockets, motors, electric lights and wires, and a host of other things fairly unintelligible to the layman. If we are interested in statistics, the engineer who escorts us will tell us that approximately 1000 feet of pine wood went into the framework of the exhibit, and some 300 square feet of tempered hard board; that about 50 feet of roller chain—much like heavy bicycle chain—was needed to act as conveyor for the various moving pieces of the exhibit; that winding through the small, cramped housing in which we stand are around 500 feet of electric wiring; that 25 electric lamps supplying a total of 1500 watts of light were used to produce the desired illuminating effects; that the largest first-surface mirror obtainable at that time was procured for use in connection with projecting the 24 picture-and-text slides; and that all these separate factors, plus one or two more, were made to work together in perfectly synchronized harmony by means of a miscellany of micro-switches, motors, relays, gear reducers, and other mechanical agents.

With this general picture in the mind's eye of the working mechanism in back of the exhibit, let's go out and have another look at its front.

As we stand watching the center panel, with its illuminated changing calendars below and the succession of colored transparent pictures and text in the semi-circle above, the engineer reminds us of the slide projector and the mirror inside. The movement of the six calendars, he explains, is controlled by the projector, synchronized with the series of 24 picture-and-text slides. When it is time for one calendar to move out and another to move in, a switch is actuated which in turn starts the machinery moving the slide to a new position, carrying the calendar with it. If, for some reason, the switch controlling the machinery moving the slides were to get out of step with the apparatus projecting the picture-and-text slides, there is an automatic self-synchronizing switching arrangement which takes over and controls the situation until the switch adjusts itself.

Very new and very interesting as a technique in the exhibit field is the

process that was used in making the illuminated calendar slides. On its own printing press, the Museum printed each calendar on a large sheet of special paper. Each sheet was then put between two sheets of translucent bakelite, the translucent plastic material being cemented to the printed sheet, making it a single unit, proof against wear, proof against damage by oil from the machinery, and perfectly legible at all times. As for the stationary calendars at each side of the center panel, these were made by placing a transparency of the calendar behind a piece of plate glass, and behind that a sheet of translucent bakelite.

So much for the mechanical side of the exhibit.

But there is another side to this matter of exhibit planning which is equally important, and which, indeed, must be considered before even the first step in construction can be taken. This is the problem of settling upon the design of the exhibit—the form in which it is to be built.

Such a problem can be posed in the question: "What, under the given conditions of space and expense, is the best way in which to present the message this exhibit must convey to those who see it?" In finding the answer to that question, you find the design you will follow. Then, having decided upon your design, the next step is to select the materials best adapted to carrying out that design. With these two fundamentals out of the way, the business of construction can begin, and the mechanical details can be worked out.

In the final analysis, however, the last word said about any exhibit comes from the public which views it. For the public reaction, alone, will indicate whether or not the presentation has been successfully made.

And the interest of the public in The World Calendar exhibit through the past 12 months, as well as the attention that has been given it in newspapers and periodicals, has shown definitely that in writing up the books of the Museum for the year, this exhibit can confidently be placed under the heading: "Successes of 1939."

SEASONAL COLORINGS

DURING the year, readers have written to the Editors complimenting them on the attractive and unusual cover design which the *Journal* has been using since the first quarterly issue of this year. The colors selected for the quarterly issues were suggestive of the four seasons of the year, emphasizing The World Calendar's quarter divisions and the harmonious association they have with the seasons.

The cover of the first issue of the year was in blue, suggestive of the clear brisk winter sky. The spring issue in green, typified the color of newly opened buds and foliage. The summer issue's bright yellow corresponded to the brilliant summer sun. And the current issue, which rounds out the year, is clad in russet brown of autumn foliage.

These bright and colorful covers will continue to enhance the value and significance of future issues of the *Journal* and appeal to the eyes and imagination of its readers.

TIME AND ETERNITY

By ANGELA MORGAN

(The Romance of the Calendar—Its Advance Through the Centuries)

Down the long reach of giant centuries
When men were frightened by Eternity
And strove to master it and tame its strength
To fit the near needs of humanity,
The Calendar was born; earth's gallant thrust,
Her test of hardihood at grips with Time.

Strange infant, gasping child, bold progeny
Of two brave forces destined to unite—
Necessity and Reason fused in one
Supreme assault upon the Infinite.
And thus the child was born, to thrive and grow—
To be the measurement our earth should know.

First came the Lunar Calendar, when men,
Appalled by Day that vanished into Night,
Hailed the new moon as rescuer and friend—
The never-failing moon that brought them light—
And welcomed each appearance as the sign
That helped them hold the fleeting months in line.

Then the Egyptian Desert grandly woke
In tribute to the Sun, that blazing Lord
Who, season after season, held his throne
Though earthly monarchs perished with their hoard.
The great Sun Dials of the Desert spoke
When moved the shadows of the Pyramids.

Thus, men began to share the pulse of God,
To listen in for signals and for signs,
Baring their faces nightly to the stars,
Drinking Eternity as we drink wine.
Standing beneath that many-candled roof
Each of his own divinity had proof!

And noble Caesar hearkened Egypt's call,
Gave heed to wise Sosigenes, who told
Of days and months and festivals that chimed
In rhythm to the cycles of the sun.
Strange destiny, that Caesar should be snared
By that same Ides of March his word declared!

Thus Egypt gave her wisdom and her skill
To serve the future and the future's sons,
While steadily the hidden plan emerged
As evolution had its way with men.
The pattern bloomed, a larger vision spanned
Discoveries to meet the earth's demand.

Each Era brought its time-appointed man,
Its genius of the stars, its wizard mind
To cope with time in terms of human need,
To fraternize with time and space alike
Till this our orb should keep a truer pace
And harmony enfold the human race.

As if a chord were struck, a spring released,
Some cosmic signal known to him alone—
A summons out of Nowhere, yet as clear
As though a bell chimed sweet upon the ear—
He came, the destined one, to set his seal
Upon the plan his vision should reveal.

Great Constantine, whose heartbeats were attuned
To higher issues, golden purposes,
Poured the clear floodlights of Divinity
Upon the pages of the Calendar
And brought the living Christ to men's affairs,
That henceforth heaven should bear our mortal cares.

The bright procession of the years went by,
Nor paused for change, till Gregory appeared—
A Pope whose wisdom and sagacity
Matched the white beauty that his spirit wore.
And we who greet the first glad day of spring
Should to his name yield grateful offering!

As rolls the ordered world, so rolls man's need—
And evolution cried again for change.
Confusion follows on the heels of Time
When man's poor measures falter, nor concede
Perfection's Law, which spells a larger Scheme
And fuller knowledge of the Cosmic Dream.

"It is not good for man to live alone,"
To think alone, to plan his world alone.
A fire there is within a woman's breast,
A spark there is within a woman's brain—
The perfect plan evolves in this our age
When woman's word appears upon the page.

A woman's genius, answering the cry
Of tense humanity for true release,
Bestows the grand achievement of the years:
A Calendar perpetual and fair,
The one supreme and eloquent reply,
Earth's instrument of order and of peace!

Sounding the keynote of that Symphony
Wherein earth's heart obeys the beat of God's;
When nations shall in amity confer,
And understanding shall the world unite—
Humanity swept onward in that sea
Where Time is wedded to Eternity.

Angela Morgan

TIME AND TAXES

By JOSEPH LILLY

Commissioner of Taxes, City of New York.

THERE are two factors which induce me to lend my interest to calendar reform. One factor is the increasing precision in the current life of the modern world, and the other is the resultant trouble caused by variables. It would seem obvious that to diminish the variables would enable us to meet more easily the requirements of greater precision.

I speak as one interested, for the time being, at least, in taxation, and by extension of my interest in fields in which taxes are levied, collected, and spent; and these, generally speaking, are the fields of business and government.

It is true as it is trite that our institutions run the danger of stumbling to disaster because of the awkwardness caused by increasing expansion. The details accumulate and become continuously more complex. So many variables tend to confuse. Our objectives should be to progressively simplify, and certainly we should begin by eliminating the variables that are due to arbitrariness. The calendar is aptly a case in point.

The amount of unnecessary complications and computations that could be eliminated by the adoption of a universal calendar proceeding from a common-sense rationale is untold. This extends from the field of simple arithmetic to the area of jurisprudence, for matters of great moment sometimes depend upon the imbecilities of the present calendar. In the field of business, the use of money involves a risk in which the entrepreneur requires more and more certainties, and at the very least, a release from those complicating uncertainties which reside in our present calendar.

Specifically, the building industry lays the loss of millions of dollars annually directly at the door of the present irregular calendar. For each piece of new construction, bids are required, and into the making of a cost estimate upon which these bids are based, goes an abundance of the variables I have been discussing. It is in the making of estimates that the builder runs afoul of the calendar.

Labor represents, at a minimum, 60 per cent of the cost of construction, hence the estimator must know the number of working days in each month. Holidays must be accounted for. If the Fourth of July falls within the construction period, on what day of the week will it fall, and what will be the productive value of the days immediately before and after the holiday?

The variables in this industry, which in 1929 did $11,000,000,000 worth of business in the United States, accumulate dizzyingly. For example, the day on which the job begins can spell the difference in profit and loss by

diminishing the number of working days and so, increasing the labor costs, by similarly producing a rise in cost of delivering necessary materials.

Clyde Mann, managing director of the Certified Building Registry of the United States, had this to say of the problem:

"Another spot where calendar irregularity has a baneful influence is in payment of rents, interest, insurance and contractors' bills. Unequal length of months causes definite losses, some trifling in themselves, but enormous in their aggregate. The lack of a fixed relationship between weekdays and month-days means payments frequently retarded two to four days, and the interest charges piled up by this aggregate of oft-repeated delays amounts to many millions annually. Payments fluctuate similarly around legal holidays.

"Now this financial 'lag' may seem a small matter. It is a financing cost that has long been accepted as inevitable in the machinery of mortgage and management. Yet it would be greatly abated under the proposed new calendar. And remember, it is one of the factors that helps discourage private capital from venturing into the building field.

"There are listed 49,000 industrial plants which find their market in the building field. I venture to predict that each one of them would find some definite benefit from the proposed revision of the calendar."

The keeping of records for the purpose of making accurate month-to-month and year-to-year comparisons becomes increasingly important in all branches of industry. Under our present calendar, with its many discrepancies in the length of months and quarters, accuracy is so exceedingly difficult to achieve that many corporations have deliberately reshaped the calendar purely for the sake of simplicity and accuracy within their own organizations.

The Canadian Bureau of Statistics, which receives reports from 205 retail establishments, states that no less than 35 of the Dominion's larger stores are employing a four-week or a five-week month in their accounting departments. This is alleged to eliminate errors that crop up when comparisons are made between months in different years which happen to have an unequal number of weekdays.

An example of the error in calculation that the irregular calendar can produce in this sober and steady world of statistics is also provided by the Canadian Bureau. It concerns the report of a large power company. In January, 1936, it produced 220 million kilowatt hours as compared to 258 million kilowatt hours during January, 1937. Offhand, you would say that the calculation of the increase was a simple exercise in arithmetic—an increase of 17.3 per cent. But when we look deeper into the report, we discover that January, 1937, had an *extra* Saturday and Sunday, on which days the output is naturally less than on weekdays, 30 per cent less for Saturday, 75 per cent for Sunday. Making allowance for the extra week-

end, we find the rate of the increase becomes 21.5 instead of 17.3 per cent.

According to Herbert H. Rapp, formerly assistant chief of the United States Bureau of Efficiency, specific examples of calendar errors in existing government statistics may be found in practically every federal department, and he suggests a series of inquiries that might be undertaken with a view to disclosing the more shocking discrepancies.

There are other problems which cause the business men of the nation to look askance at the calendar and which have led to the movement for what is known as the *Natural Business Year*. Each industry has its own year of production and profit-taking which rarely coincides with the calendar year. The automobile industry, for example, is in the midst of its peak production period when January 1 arrives. The flour milling industry, receiving its heaviest wheat shipments in the Fall, is going at top speed when the first of the year approaches. The fertilizer industry closes its books on June 30, the agricultural implement manufacturers on October 31, and so on. The adopting of a business year *natural* to each industry would greatly ease the labor of accountancy which now is concentrated in the first quarter of the year, and, in other ways, be a decided move for the better.

Let us glance at the Federal Income Tax in relation to the calendar. Payments are required quarterly, and the days on which they are to be made are fixed as March 15, June 15, September 15, and December 15. The weekday on which these dates will fall varies from year to year. If March 15, let us say, is a Sunday, then the Government is obliged to inform citizens that payments must be made the following day and will be accepted up to midnight Monday. And what can be more melancholy than the necessity of paying taxes on a Monday? I am informed that in The World Calendar, these tax-paying days will fall always on a Friday—Friday the 15th. It is an excellent idea, for most people get paid on a Friday, business men wind up the affairs of the week on a Friday. In other words, Friday is a day on which money is in hand and can be paid to the tax offices with less of a wrench than on other weekdays.

Nothing in life, I might add, is more painful than the paying of taxes, unless it is the computing of taxes. In common with the vast majority of human beings I would rather pay my taxes than have to compute them. Every successful effort to simplify tax matters is received with tremendous relief everywhere. Not only is the computing of taxes painful for those who must pay them, but it is painful and costly to the agencies which must audit, analyze, and receive them. There are errors at both ends, the paying end and the receiving end, and many of these could be avoided and conflicts prevented if we were all proceeding in a field of universal time. And how much better it would be if that universal field were a simplified and stable one.

NEWSPAPER MANAGEMENT

By Dr. Frank Thayer

Associate Professor of Journalism, University of Wisconsin

(As told to James L. C. Ford)

MODERN newspapers are as strong as their financial resources. Courage and independence are promoted by financial independence, as I have pointed out again and again to my students and in my book on *Newspaper Management.* Men produce newspapers for commercial gain. The papers are usually sold under highly competitive conditions and therefore the most careful business management is necessary in order that the books may show a reasonable profit at the close of the fiscal year.

As a product of a manufacturing plant, the newspaper must be manufactured, marketed and merchandised the same as any other manufactured product. The newspaper depends for its success upon the sale of its two "commodities," news information for the reader, and display space for the advertiser. The distribution, financing and accounting of such large business enterprises as the modern-day metropolitan newspaper require the greatest executive ability. The newspaper owner, manager or publisher must know whether his manufacturing department is functioning without loss or at a profit, and whether his distribution is effective.

Any system or practical method which means increased efficiency for the newspaper in its problems of newspaper management should receive careful consideration and, if practical, a hearty welcome from the newspaper publisher. When The World Calendar plan was brought to my attention, it suggested possibilities for advantageous application to the newspaper business. There are five main divisions of newspaper publishing on the business side which must be considered. These are: 1. Circulation. 2. Advertising. 3. Office Management. 4. Plant Management. 5. Financing of the Paper.

Before I begin considering the relation of these five departments to The World Calendar, I should like to take up some features of that plan, and drawbacks of other plans which have come to my attention.

In a monograph by Walter Mitchell, Jr., of the Research and Statistical Division of Dun and Bradstreet, published in March, 1938, I was interested to learn of the movement known as the *Natural Business Year,* with its concept that each line of industry or trade should close its books on a fiscal year timed to fit the natural seasonal cycle of that trade. I agree with Mr. Mitchell's conclusions that: "In selecting closing dates for recommendation to an industry, the end of a quarter-year has been chosen whenever possible, so that concerns adopting the suggestion will be still

able to compare their quarterly figures with other concerns or other lines of business operating on a calendar year, or closing their books on a fiscal year at the end of another quarter. From this standpoint the equal quarter-years which would result from adoption of The World Calendar should be an advantage, in that comparability by quarter-years would be more accurate than under the existing calendar."

The advantages that Mr. Mitchell sees, it seems to me, would be of equal application in the newspaper as well as other industries.

Objections to the 13-month plan, pointed out by many writers, certainly are pertinent to newspaper management. In the first place, division of the calendar into 13 months of 28 days each would be a radical, extreme change, involving many difficult technical and human adjustments. It does not have the advantage of retaining the present, universally accepted scheme of months. Human reluctance to accept such sweeping innovations is understandable and, human nature being what it is, it would seem impossible to win general acceptance of the change without a great deal of antagonism. The World Calendar plan offers no such difficulty.

Business men particularly would have a practical objection in the impossibility of dividing a 13-month year into equal halves and quarters which, as has been pointed out, "would leave the accountants and statisticians wholly opposed; the necessity for complete readjustments of wage and rent rates; the difficulty of figuring interest on a monthly basis." As observed by the Reverend John Bovenkerk, a stimulating and intelligent writer: "Thirteen months: It throws all ordinary calculations out of gear! Thirteen monthly periodicals, 13 monthly financial statements or reports, 13 monthly payments for rent, insurance premiums, salaries, notes payable. Obviously, the fractional computations involve much labor and expense. Besides, it is customary to observe the first and 15th of the month as dates when payments become due; these dates in the International Fixed Calendar would always fall on Sunday, thus either retarding or advancing such payments. In their eagerness for an efficient and standardized calendar, the proponents of the 13-month calendar usher in a state of complicated and annoying readjustments, if not confusion, in the business world. From a practical, workable point of view, this device of 13 months in the year is a great nuisance and overshadows certain desirable features in it, which in the abstract look inviting."

There is sound sense in these arguments, every one of which applies to the field of newspaper management. I think we shall have to concede that such a reform as The World Calendar offers valuable practical advantages for newspapers as compared with the 13-month idea.

But let us consider briefly just how The World Calendar plan would concern the five major departments of the business side of newspaper work.

Taking circulation first. Circulation today is more than a problem of

selling and distributing newspapers; it is a problem of providing for the advertiser a valuable list of readers representing potential business for him. Circulation is the backbone of the newspaper industry. Without it, the advertising which keeps the wheels turning could not be obtained. The circulation manager has to consider not only the problem of distributing his papers and finding readers for them, but also such special details as the social and economic factors of his readers, mechanical factors such as typography, headlines, campaigns to increase circulation through contests, premiums and advertising. He has an immense human element to consider—not only present and potential readers but also the army of employees working for him. In the modern metropolitan newspaper such as the *Chicago Daily News*, approximately 19,000 persons are connected with the distribution and circulation of that single paper.

Phases of the circulation manager's work which would be affected by calendar reform are the seasonal and monthly fluctuations of circulation depending upon holidays and yearly seasons, annual promotions such as Christmas good-will campaigns and boxing tournaments, comparisons between contests run in different years, circulation record blanks, and circulation records such as those kept for and by the Audit Bureau of Circulations. In all these manifold phases of circulation, The World Calendar would offer the advantage of standardization, simplification, and ease of comparison.

Again, in our second major department, that of advertising, The World Calendar would prove of value. Advertising carries the lead of the modern newspaper today. Without it we could not have the modern newspaper, for the two or three pennies which the average citizen spends daily for his newspaper do not even cover the cost of paper and ink. Among the advertising phases which might be affected by The World Calendar, we find both seasonal and monthly comparisons which would be set for the same dates year after year. The same would be true of advertising statistics, a major and important factor for any advertiser, advertising agency and newspaper advertising manager. Then there is the field of bookkeeping in which the advantages of The World Calendar plan with its perpetual, universal calendar and equal quarters are obvious.

In regard to advertising, I find merit in what Frederick Clayton has to say in his study on "Calendars and Deadlines," published in June 1938: "Most important of all, perhaps, is the help that such a new calendar would give to the advertising department of any magazine publishing house. Important not only because of the fact that advertising, for most large popular publications of today, means business and revenue and profits, but important also because in part the advertising rates of a magazine are fixed in accordance with the frequency of the periodical's appearance and advertising contracts are based on issue, monthly, quarterly or yearly con-

tracts. Obviously, it is important to the advertiser to know just how many days the issue or issues in which he has taken space will be on sale, and to know that a similar contract for space in any other similar period would give him the same coverage, or at least the same coverage as a corresponding period in any other year. With such a new calendar in effect he'd know much more accurately just where he stands than he does at present, and a certain amount of guess-work in the accurate estimating of coverage, in the fixing of periods and rates, would be eliminated."

Much of this is just as true for the newspaper advertising department which would stand to benefit from The World Calendar.

Office management in the newspaper business offers us all the complex details which we find in the usual business, such as personnel administration, cost accounting and bookkeeping. In addition we have the unusually involved problem of credit and collection, not only from subscribers but also from advertisers. Federal social security and wages and hours bills have made this complex task even more complicated. In all this bookkeeping minutiae any system which can standardize and simplify is of decided value. The World Calendar would aid in such improvements.

Plant management raises similar difficulties in the fields of record-keeping for composing and press rooms. Hours of employment, inventory, replacement and maintenance of physical and mechanical equipment—a major question in the highly-mechanized, up-to-date newspaper plant of today with its intricate processes of production—these all must be considered and for all of these, solutions of standardization and simplification offer definite advantages.

Lastly, there is the question of financing the modern newspaper. Much of modern-day financing is corporate, involving bond and stock flotations, dividend payments, surplus and reserves. In selling or purchasing a paper, two main methods of appraisal—net earnings or gross earnings—are available. Costs, incomes, and expenses all must be figured. Perhaps in no other business is there a greater need for scientific analysis of business costs. A more scientific calendar system certainly would contribute toward such scientific analysis.

No one system or solution, of course, can solve the many intricate and complex problems offered by the newspaper industry of today. But any system which can help in the solution of some or any of these problems should gain the careful consideration of the modern newspaper owner and publisher. The World Calendar does offer possibilities and many apparent advantages; it very conceivably might mean new efficiency for newspaper management.

CHILDREN AND THE CALENDAR

By Eve McCullough

ONE of the best stories or legends relating to the calendar was told to my little girl by a colored nurse-maid. I didn't hear the story as originally told. The child repeated it to me. Which is proof that it made an impression, proof also—if any is necessary—of the fascination the calendar holds for children. This is the story:

Once upon a time there was a pretty little girl named Callie. She was unhappy because she had a bad stepmother. This stepmother had a daughter of her own called Jeanette and she made poor Callie do all the cooking and sweeping and dishwashing. Jeanette ate candy and the finest food and wore silky clothes. Callie had nothing but crusts.

Well, one day the stepmother said to Callie, "Listen, you brat, go out and fetch Jeanette some strawberries and don't come back without them." Now that wouldn't have been such a hard errand in June or July, but it was a freezing cold January day. Snow was on the ground. And there were no stores to go to buy them, and even if there were stores the little girl had no money.

At first Callie tried to push the snow away with her hands and feet hoping to find a few berries, but she found only moss and ground-pine and, of course, no fruit. Her hands became wet and numb with cold, and in despair, she sat down on a log and began to weep. Just then she heard a soft voice at her ear saying,

"Why are you crying, little girl?"

"I am crying," sobbed Callie, "because my stepmother sent me to fetch strawberries and the ground is covered with snow and there are no strawberries."

"If that is all—dry your eyes, and I'll have you a pailful before you can blink your pretty eyes ten times."

The story from this point on is a little confused but I gathered that the soft voice marshalled twelve old men, each representing a month of the year, and told them the plight of the little girl. The old men went into a huddle and decided that the only way to help her out would be to change places. So January, February, March, April and May retired, leaving the world to June and July.

Once these two were in charge, the snow vanished from the ground, flowers blossomed, leaves appeared on the bare branches of trees, and bird song filled the air. And in the very field where Callie was sitting there spread a scarlet cover, strawberries so thick and numerous that it was all she could do to step without squashing some.

So she brought home a pailful of strawberries to the chagrin of her

cruel stepmother who couldn't believe her eyes. For the moment Callie crossed the threshold the old men-months of the calendar changed places again and the snow was once more on the ground and the icicles fringed the eaves.

After that, I imagine the stepmother set Callie further tasks and harder ones, and the little girl, helped by the gnome with the soft voice, performed them all and in the end destroyed the stepmother and her daughter, married the prince and lived happily ever after.

The story appeals to children because it is fantastic and because it is a frustration of authority. First, the authority of a parent. Second, the authority of the system of reckoning time. January, February, March and so on are a sequence fixed and immutable, and anything that mixes it up, especially for the purpose of helping out a child being put upon by an adult —well, it is sheer delight.

For the most part, however, children are routinists, conservatives of the most intransigent variety. They do best when they know that mealtimes, bedtimes, schooltimes, and all other times, arrive at a definite hour and can be depended upon. They enjoy the fixed orbit of the alphabet from A to Z. They like the fact that a week always has seven days and that they always follow each other in the same order Sunday to Saturday. They also take pleasure in the months.

What disturbs them, notwithstanding their mischievous delight in our fairy tale, is that they cannot depend upon the months for a fixed number of days, as they can upon the weeks. They don't mind memorizing, "Thirty days hath September, April, June and November . . ." It's a rhyme and they like rhymes. But when applied to the calendar, it gives them no satisfaction because there is nothing logical about the fact that January has 31 days, February 28 days, March 31 days, April 30 days, and so on. They accept it, but only as they accept saying "thank you" and "had a lovely time" when they feel no gratitude and had a perfectly awful time.

The first hosannas for The World Calendar when put into effect will, I am sure, come from the throats of the uncowed little ones of the land. The regularity and rhythm of 31-30-30, 31-30-30, 31-30-30, 31-30-30 will appeal to them. It will be logical, understandable. The number of the month-day will match and stay with the weekday name. There will be the harmony and symmetry which they love and invariably bestow on their own creations. The two extra holidays will also not want for appreciation —Year-End Day and Leap-Year Day.

Their rejoicing will arise from their feeling that if there must be a calendar, it might as well be a simple one. For himself, the average child under ten could dispense with calendars entirely. I remember reading and rereading *Robinson Crusoe* when I was a girl. I knew it virtually by heart. But the part that aroused no enthusiasm, that did not interest me a little

bit was his efforts to work out a system of reckoning time-passing. I didn't put my disinterest into words but I must have felt, "Why reckon time, what good does it do you, especially past time?"

Under the age of six, children have no earthly use for the past. They hold no grudges and by the same token hold no gratitudes. If they knock over your pet bric-a-brac and smash it, and you spank them for the deed, they may remember to be careful; but the remembering is a reflex and unconscious. It is more of the present than the past. At these ages, they accept without thinking the passing of the weeks and months. They greet each season as a stage set for them, as an opportunity to do new things, play new games. If they were naming the months, they would name them not in honor of emperors or presidents but as peasant people have named them, to signalize the time of strictly utilitarian pursuits. January would be Month of Sleds; February, Month of Snowballs. May would be the Month of Roller Skates. July would be Month of Swimming. And so on.

It's well nigh impossible to get pre-school children to save money because the future is a nebulous quantity. They have as little faith in tomorrow as an American in Mexico has in mañana. Little by little, we adults teach them that there is such a factor. We do it by keeping our promises to them, by compelling them to save, and showing them what can be accomplished over a period of time by hoarding pennies.

As they grow older, they understand. The future begins to have significance. If a boy is adept in swimming and in no other sport, he will find himself watching the calendar with interest, waiting impatiently for the months to pass until the season for showing his prowess arrives. Schoolboys, loath to attend to their duties, learn to count the days which separate them from the vacation holiday. The circus posters inspire youngsters to count time and we all know the proverbial good behavior that precedes the Christmas season.

Through adolescence, we live in the present. The past assumes greater importance as we advance in years but we reserve our reveries for the future, the vast, unexplored, infinitely promising years to be.

In all these changes from infancy to childhood to adolescence to maturity, the calendar plays an effective if silent role. On the wall or on the desk, it chronicles the way of the days and months. It seems to me the marching on of time would have greater importance and become more realistically bound up with everyday affairs, certainly the affairs of children, if it were the kind of calendar that called for no effort to be remembered—a system like The World Calendar, logical and symmetrical, in which no abracadabra checkerboard on wall or desk had to be consulted.

No one has given sufficiently respectful thought to the problems of children to try to work out a calendar for them—one which would go beyond numerals, to the facts of earthly and lunar migrations, to the seasons, the tides, the equinoxes, et al. I know there have been mechanical wizardries on the part of clock-making genius which told the complete story of time. What I have in mind is a simplification on paper that would be understandable at the various ages of childhood and youth, that would indicate the passage of the earth around the sun yet not neglect such simple everyday items of importance to children, as the time to begin planning the Halloween prank, the time to watch the pond for freezing, the time to cock the ear for the tinkle of the ice cream man's bell.

ROMAN CATHOLIC VIEWPOINTS

By H. MICHAUD

(Translated from the *Revue Apologétique*, January, 1938, Paris)

CALENDAR reform has been much discussed these last years, especially since the appearance of Abbé Chauve-Bertrand's book, which covers it completely, although concisely, with an unequaled competence. One may say of this book *(La Question de Pâques et du Calendrier)* what was said of its predecessor, ten years ago. The *Questions Liturgiques* called the latter "the best study that has been published in the French language on this subject." And Cardinal Mercier described the work as "a very complete document, a veritable manual on the subject."

Abbé Chauve-Bertrand, then, has published a new volume, important not for the number of its pages, but for the erudition of its author, his exact information and the weight of his judgment. M. Chauve-Bertrand was, in fact, the collaborator of Dom Guépin in the work which brought about the bull *Divino afflatu* (1911) on the liturgical reform of the breviary, the Missal and the general calendar of the Church.

Concerning the reform of the civil calendar, the Abbé wrote articles for various reviews, and finally produced *La Réforme du Calendrier* which, written in 1914, was not published until 1921. By that time the author was well prepared to give us a complete and timely study, which was very favorably received in scientific and ecclesiastical circles.

In his new work, the author, departing from his first reserve, gives his preferences and their motives; he gives especially the opinion of Rome, which inclines towards moderate solutions, as more likely to attract the greatest number of adherents.

We will use M. Chauve-Bertrand's principles to explain some outstanding points: 1. The essential elements of the problem; 2. The history of modern reform; 3. The proposed solutions, and particularly the question about the year being divided into 12 months, or into 13.

The elements of every calendar (hours, days, weeks, months, seasons and years) are all far from having an equal value and an equal consistency. It is clear that the division of the day into *hours* is purely arbitrary. We count them as 24; but the Romans divided the night into four watches, and the day into 12 hours of quite variable duration; while the Chinese divide the whole day into 12 hours, which are then subdivided into eighths.

The only two subdivisions universally used, and based upon something really objective, are the *day*, determined by the rotation of the earth upon its axis, and the *year*, determined by the earth's revolution around the sun in 365¼ days. The day is easy to determine everywhere and at all times,

except in the neighborhood of the poles, which, however, are uninhabited. The year cannot be so exactly determined, except by civilized peoples, who can observe and calculate: who notice that an exact number of "moons" does not constitute a solar year, the only acceptable unit, and discover, at the same time, that years of 365 days carry with them a slow upsetting of the seasons.

The notion of the *month* is one that for a long time was indistinct. Men could easily see the moon shine when night had come; they remarked its variations, its decline, and especially its reappearance as the new moon; but since the total cycle consists of 29½ days and is not everywhere as clear as in the Orient, the primitive month, which was always the lunar month, for a long time remained indistinct. Sometimes 28, 29 and often 30 days were counted: the latter because 30 made three *decades* and because the *decade,* marked off on the two open hands, is a natural, primitive institution, which one finds almost everywhere, but especially in Chaldea before the promulgation of the Mosaic law.

The *week* was likewise a primitive institution in Chaldea, and, it is believed, a natural fact well before it was recognized by all peoples as a divine institution. In the climate of Chaldea the atmosphere is dry and very clear, and the sky extraordinarily bright, so that the phases of the moon mark very well the rhythm of the seven days (plus a practically negligible, and for that reason unperceived quarter). Actually, the entire cycle is not 28, but 29½, a number which coincides exactly with nothing—neither with the quadruple of the week, nor with the triple of the *decade.*

The *seasons* were better determined by the Chaldeo-Babylonians and Assyrians, and after them by the Egyptians, who were not as good astronomers (the atmosphere of Lower-Egypt being much more nebulous) but were excellent mathematicians. The equinoxes and solstices are phenomena rather easily observed, as are likewise the periods of the floods of the Nile or the Tiber and certain major local phenomena, from which an exact determination of the beginning of each season may be made. This led the Egyptians by the year 4236 B.C. to adopt the year of 365 days, in spite of their month of 30 days. The year was irregularly corrected at first; then every four years a supplementary day was added, making the average 365¼ days, the duration of the solar year, and therefore the true year of our planet.

In 432 B.C. the Greek astronomer Meton discovered that the cycle of 19 solar years equals 235 lunations. Our readers know the intricate complications of the Roman calendar, which then consisted of 355 days, and the vain efforts made to correct it. The Roman calendar was in accord neither with the moon nor with the sun, the concord of which is in itself so difficult to discover, how much more to express in a calendar for popular usage! Julius Caesar thought it necessary finally to put some order in the calendar and in chronology. In the year 46 B. C., having called in the learned astronomer Sosigenes, from Alexandria, he intercalated, in addition to the 13th month of 23 days, two others of 33 and 34 days, which made a "year of confusion" of 445 days. He also instituted a leap-year day (*bis sexto ante calendas martii*) which would be placed every four years before the 4th of February.*

We know also that the solar or tropical year has not exactly 365¼ days, but consisted of 365 days, 5 hours, 48 minutes, 56 seconds, at the beginning of our era, and counts today 365 days 5 h. 48 m. 45.98 s., since it diminishes one-half second a century. It was a Scotch monk, a long-time resident of Paris, John of Holywood, who was the first to note this error of about 11 minutes in the Julian calendar, and the means of remedying it. Roger Bacon interested Pope Clement IV in its correction, which the Council of Basel (1417) demanded in vain, and which was brought about only in 1582

*The author here seems somewhat confused. As the Roman Calendar existed before Caesar, it would have accorded quite well with the sun if the proper intercalations had been made; but the priests, for reasons of self-interest, did not intercalate properly. Also, the leap-year day (*a. d. bis vi Kal. Mart.*) was placed after Feb. 23, not before Feb. 4.—Editor.

by Gregory XIII, after laborious efforts and interminable discussions. The result is the calendar now universally accepted by all countries, even by China in 1912 and by Turkey in 1927, and called ever since the Gregorian.

Why do we criticize the Gregorian calendar? Not for its lack of astronomical exactitude. The rule of adding one day every four years, except in the century years the first two digits of which form a number divisible by four, is very simple, and so efficacious that the slight error involved will not amount to one day until the year 4000. All the other modifications of the intercalary day that have been proposed are more complicated.

We criticize our present calendar on other grounds. Easter, fixed on the first Sunday after the full moon which follows the spring equinox, varies from March 22 to April 25, which is extremely inconvenient in our modern society where everything is provided for, regulated, and normalized. Not only Easter, but all the mobile feasts are similarly advanced or retarded year after year. Yet, sessions of and vacations from schools, universities, courts, and parliaments, etc., are fixed according to these Christian feasts. Their "quarters" are found to be unequal and irregular, varying each year as to date, temperature, happenings; whence come irregularities of dress, length of terms, convenience, etc.

The same days never fall on the same dates; we must consult the year's calendar in order to know on what day will fall such a feast, such a leave, such a re-opening, such a *"pont"* (stopping work on a working day that is placed between two holidays). All these questions would be determined upon once for all if Easter were fixed on a certain Sunday of a certain month, and the same were done for all the related feasts. In university or other sessions, for example, the "quarters" being of an invariable duration, the material could be definitely and finally reapportioned, and then there would be no longer a lack of balance due to the retarding or the advancing of the Easter or Pentecost vacations.

"But Easter, 'the 14th of Nisan,' is a doubly holy tradition received from the Jews!" When one examines how the Jews counted their years of 12 lunar months plus one 13th when the lack of accord with the season became too flagrant, this argument loses much of its force. And then, today, who still counts the new moons? Who obstinately persists in this impossible agreement between the lunar cycle and the solar cycle, as problematic as the quadrature of the circle? Ever since there were men who knew how to observe and calculate, their science has been powerless to solve the problem.

At the Congress of Rome in 1922, the Astronomical Union declared that the stabilization of Easter, which was asked of it in the name of many different and important interests, was also demanded for a scientific reason: "The mobility of Easter is a relic of the luni-solar calendar which the Hebrews used at the time of the institution of the feast. That calendar today is out of date and abandoned, and it would therefore be a matter of progress to stabilize this feast in the solar calendar."

The cycle of fixed feasts comes from the Julian calendar, the cycle of mobile feasts from the Jewish luni-solar calendar. "But," notes M. Chauve-Bertrand, "the two systems are reconcilable only at the price of the confusion which is produced each year in the feasts. And thus, ancient peoples, after having experienced the inconveniences

of the luni-solar system, abandoned it to adopt the solar year. It is this improvement, dating from the time of Julius Caesar, that we are asking the Church to adopt. We are requesting her not to take account of the moon any longer in the determination of the date of Easter. Because, in whatever manner one considers and reconsiders the question, one always returns to this fact: the mobility of Easter comes from the luni-solar computation of the Jews. It represents today only an imperfection of the calendar in use at the time of the institution of that feast."

But the Council of Nicaea? The text, which we will not cite in full, says clearly that the Council wishes only one thing in the whole Church: "Leaving aside all research and all discussion, the Fathers of the East, like those of Rome and Alexandria, all, with one voice and on the same day, shall celebrate unanimously the holy feast of Easter." Provided, then, it be Rome that indicates the day, even modifying the established custom if thought opportune, the wish expressed by the Council of Nicaea will be respected.

Gregory XIII knew well that his reform, perfect as to two essential points, was incomplete. Already in 1682 Canon Ouvard of Tours published a *Calendarium perpetuum et irrevocabile,* with Easter on a fixed date, which the Jesuit Nau vigorously supported. It was the Italian priest Mastrofini, mathematician and philosopher, who in 1834 traced the outline which all the reformers of the calendar have since taken up and completed, and of which many of the solutions proposed to the League of Nations are only variants, with some slight exceptions. January 1 in Mastrofini's plan would always be a Sunday, followed by 52 regular weeks. The year would be completed by a 365th day, *feria octava,* followed every four years by an intercalary day. As for Easter, Mastrofini insinuated that he would prefer to have it on a fixed date, a Sunday.

In 1849, Auguste Comte published a calendar composed of 13 months of 28 days, terminated by a complementary day, and adorned with the names of great men, from Moses to Bichat. From 1862 to 1864, the question was agitated in Germany and in Russia. It was taken up again seriously in France in 1884; a meeting presided over by Flammarion gave first place to a project which was none other than that of Mastrofini with some improvements.

Since then, the idea of a calendar at once exact, invariable, and universally adopted has made steady progress. Here are its principal steps:

In 1896, M. Foerster, Director of the Observatory of Berlin and President of the International Committee on Weights and Measures, addressed to a number of scientific, political, and religious personages, a circular on the subject of the stabilization of Easter. Feeling there were behind him the principal learned bodies of Germany and the Protestant Churches, he proposed to fix Easter on the first, or even better on the third, Sunday after the spring equinox, and to return leap-year day to the end of the year. Cardinal Rampolla, Secretary of State for Leo XIII, sent him a very encouraging note about the plan.

In 1898, the *Ephemerides Liturgicae* published several articles in favor

of the reform originated by Mastrofini. It was even hoped that the plan would be inaugurated in 1900. A powerful movement arose in the Balkans. Nicolas II showed himself very favorable towards the project. The Astronomical Society and the Observatory of Saint-Petersburg published remarkable works in favor of the Gregorian calendar and its amelioration. But the Holy Synod made it all fail for two reasons: because the Gregorian calendar was imperfect on account of its double cycle, and because the initiative for a reform had to come from the Czar alone.

A development which passed unperceived by the public, but which was of great importance, took place in Rome in 1907. At the plenary meeting of the superiors of the 14 Benedictine congregations called to discuss the reform of the monastic breviary under the presidency of Dom Guépin, representing Solesmes, a vote was *unanimously* given in favor of the reform of Easter and of the calendar.

Since then the movement has taken a practical turn and become very active: in London, Brussels, Boston, Berne, Paris, from 25 to 47 governments, hundreds of chambers of commerce, numerous industrial associations and societies of learning, all demanded the convocation of an internationl commission to settle the question which they considered very urgent. Germany and Belgium thought the problem was essentially religious and asked that it first be placed before the Pope. But the Swiss had no official representative at Rome, nor had Germany. The example of the Congress of The Hague, from which the pacifists emphatically excluded all representatives of the Holy See, was not encouraging. Unfavorable prejudices were circulating clandestinely.

At the Congress of Boston, 1912, the members present, representing 47 nations, unanimously expressed the desire that the fixation of an invariable and universal calendar, with Easter on a permanent date, be referred to the Holy See. Pius X later approved the proposals in principle and encouraged the work, but he thought it proper to decline the offer, reserving to himself the study only of the religious year. In 1911 Dom Cabrol published an article declaring that we could cease to take account of the moon in the determination of the date of Easter.

Then came the war of 1914 and interrupted everything. When the war had ended, the movement for unification grew, particularly in the Balkan states. Turkey finally adopted the Gregorian calendar in 1927. China had preceded her in doing so in 1912, Japan in 1873.

After laborious attempts on the part of M. Deslandres, Director of the Observatory of Meudon, in 1918, and of the International Chamber of Commerce of London in 1921, a calendar commission was finally founded and presided over by Cardinal Mercier of the Astronomical Union of Brussels, of which M. Baillaud, Director of the Paris Observatory, was elected president. At the Congress of Rome (1922), this commission adopted the following resolutions: 1. To approve of a perpetual calendar conserving the 52 weeks of 7 days, plus 1 or 2 supplementary days; 2. To place January 1 on the day at present occupied by December 22; 3. To divide the 364 days into four parts of 91 days each, there being in each quarter two months of 30 days and one of 31; 4. To stabilize the feast of Easter.

The League of Nations, then enjoying great prestige, took the matter in hand on September 1, 1922. We will not relate its works. Let us note only that in the following year it secured the cooperation of The Reverend Father Gianfranceschi, S. J., Director of the Vatican Observatory, in the name of the Holy See; of The Reverend T. E. R. Phillips, Secretary of the Royal Astronomical Society of London, in the name of the Archbishop of Canterbury; and of Dr. Eginitis, Director of the Observatory at Athens, in the name of the Patriarch of Constantinople. All three of these favored the reform, and declared that it would meet no insurmountable obstacle.

A questionnaire was addressed by this commission in 1923 to all governments, chambers of commerce and industry, societies of learning and corporations, and, of course, to all religious authorities. After a third session (1926), a report was published of which this is the essential part:

"The Committee discards all fantastic projects, and those which would too greatly upset the accepted calendar; those which bring with them the periodic introduction of a supplementary week; all modifications of the Gregorian rule concerning leap years. The Committee does not believe it can any longer recommend that the year be made to begin from the winter solstice.

"The Committee retains and expounds three ways of reform: 1. Equalizing the months and the quarters, without speaking of blank days. 2. Making the calendar unchangeable by the introduction of one or two blank days. 3. Using one or two blank days with 13 months of 28 days." The feast of Easter was to be stabilized on the second Sunday of April.

The Committee adds the following which has always been the opinion of the Holy See: "No reform is realizable without the enlightened support of all, or nearly all, the principal organizations which are interested in it: notably religious, administrative, economic, and scientific."

A principal difference of opinion arose in 1922, on the question of 12 months or 13, the latter plan having had at one time ardent and earnest partisans. A change has since taken place; M. Bigourdan thinks "that there can be found a basis of agreement only in a system (that of the present 12 months) that is a leading and official one." And in fact, from 1930 on, the majority opinion has been on his side, to the marked satisfaction of the Holy See.

Auguste Comte and some obstruse logicians made the weeks begin with a Monday, Sunday being a day of rest, and hence logically the end of the week. But in Christian tradition it is Sunday that is the important day, the one which gives to the week its proper physiognomy, the one which is indeed the great feast that determines the whole octave. The great majority of authors of plans have understood it so.

In both the 12-month and 13-month systems the year would end with *one or two holidays*, which Rome would willingly accept. It is the 12-month plan that is in favor at present. It has the great advantage of offering a solution more in conformity with the spirit of tradition, and it will certainly be more easily accepted by all.

The names of the days and the months can cause no difficulty, being for the most part of pagan origin. The sun (Sunday, *Sonntag*), the moon (*Lundi*, Monday), Jupiter (*Jeudi*), Venus (*Vendredi*), Thor, God of Thunder (Thursday, *Donnerstag*)—all these are pagan. As for the names of the months, some are pagan, others are simply absurd. Six are consecrated to the gods of Olympus and of Hell, two to deified Julius Caesar and Augustus, and the four remaining now have names that mean nothing: 7th, 8th, 9th, and 10th.

The Church cannot be much attached to these denominations, and would have no objections to accepting any new names which scholars, animated with a mind to remedy the existing anomalies, might propose. One possibility would be to designate the months by Roman numerals, as the Swiss mail has done for the last 30 years. M. Delaporte proposes to name the months Primile, Duxile, Tercile, Quartile . . . Decile, Undile, Dudile, and Tredile. As for the days of the week, provided that the first is called Dimanche—Day of the Lord (however differently translated), and not "day of the Sun"—it would matter little if the others received numerical names. This would avoid all annoyance, and would be easily understood, even by foreigners.

Today historians are almost unanimous in giving April 7 of the year 30 as the exact date of Easter which, in the Jewish calendar, was the 14th of Nisan. There could be no question of celebrating a Christian Easter on any other day than Sunday. It seems that the second or third Sunday of the fourth month would be well chosen as almost coinciding with the date of the historic Lord's Supper. On the other hand, because of differences in temperature, the Southerners prefer the first Sunday of April, the Northerners the third. Discrepancy of temperature according to the latitude, and even in the same latitude according to the nature of the country, is inevitable. In

France, temperate country par excellence, Provence enjoys a climate different from that of Ardennes, Vosges one different from that of Bretagne, Bordeaux different from Clermont-Ferrand. The discrepancy of climate is even greater between Venice and New York, both in the same latitude. And what can one say of the equatorial regions and of the antipodes, where the seasons are reversed! Each one must sacrifice some little of his ideal and of his convenience for the good of all. Let us be catholic.

As for the beginning of the year, the most eminent astronomers and writers on liturgy agree that the ideal date would be the *winter solstice*. All other dates are conventional, while this one alone is real. Plutarch had already noted the fact: "Then the sun, ceasing to go on, *begins to return* and take up again its path towards us. It seems that this is, both according to nature, and with regard to us, the most reasonable time to begin the year, since it marks the point where daylight increases and night diminishes." M. Chauve-Bertrand, echoing Dom Cabrol, and we may say all the Benedictines, adds: "What Julius Caesar dared not do (nor later, Gregory XIII) why cannot we accomplish today?" He cites five eminent astronomers, and some twenty others, who would desire it. "As a result of such an arrangement the new year would coincide with Christmas, and both of them with the solstice of winter. We should recommence the civil year at the same time as the religious year, as in the days of Charlemagne, when that custom was so popular; and this date of the solstice no longer would carry with it the inconvenience of coming in the middle of a month. The true year for us, the one of most importance in practical life, would have the same natural and religious beginning, for the liturgical cycle harmonizes the symbolism of the great feasts with the astronomical year."

Though explained and upheld by M. Bigourdan at the Congress of Rome (1922) and shown to be very advantageous for statistics and meteorology, the proposition nevertheless has not met with any general approval.

What is to be concluded from all the preceding facts, or rather what conclusion is to be desired, since we have not the right to formulate one?

We have seen that Pius X did not wish to take the initiative in this matter; that he confined himself to supporting the proposed solution, if it would fully respect the religious rights and traditions which it is the Church's mission to conserve and propagate in the world. He thereby encouraged the work for reform, which is so well advanced at the present time.

Abbé Chauve-Bertrand declares that the 13-month plan, in great favor for some time, has given place to that of 12 months, which seems more easily received by all, and which seems at present more in favor with the Holy See.

We will be careful not to prophesy. We will simply adopt the prudent opinion of Dom Rombaurt Van Doren, in the excellent *Revue des Questions liturgiques et paroissiales* (June, 1937). Describing a tract on this matter, in which it is declared that the solution "seems to be reaching maturity," this eminent writer on the liturgy says:

"Whatever may happen, the expectant attitude of the Church—devoid of all defiance—is the most normal and the best. So much the more does Rome, whilst manifesting this prudent expectation, study and follow the question very closely. Of this fact we may be very sure."

ICELAND'S ANCIENT CALENDAR

By THORKELL THORKELSSON

(Translated from an article in *Aarboeger f. nordisk Oldkyndighed oy Historie*)

BEFORE the colonization of Iceland, the Scandinavian people had the 7-day week, the lunar month, and a year divided into two *misseri*, summer and winter. An older 5-day week which certain scholars try to trace, is very doubtful. In the beginning, the lunar months were used without any very clear distinctions as to the number of days they contained. People judged how far each month had advanced by noting the aspect of the moon.

But in northern latitudes there was difficulty during the summer in basing a calendar on lunar observations, because few people showed any interest in the moon at that season of the year—the light of the sun being predominant during the whole 24 hours of the day. The full moon was only visible at the bottom of the horizon, and in some years it did not appear above the horizon at all for days at a time.

So the custom grew up of basing the calculation of time, during the summer, on a straight *count of weeks*. Eventually the lunar months went out of use completely in this period of the year.

Even today, the ancient lunar-month names of the winter months—*Thorri, Goi,* etc., have survived, but there is no trace left of any lunar-month names for summer months.

The difficulties of a system which combined a count-by-weeks in summer and a count by lunar months in winter, led to a determination of an *average length* for lunar months. They needed a month which would hold good for about eight months of the year, and it was judged that a 30-day month would be most convenient.

This is about the situation presented at the beginning of the Tenth Century, or about the year 900. Then came the foundation of the Representative Assembly of Iceland, the *Althing,* and the adoption about 930 of the first general laws for the country. It became necessary to introduce a definite order into the calculation of time. The system adopted was in strict conformity to existing practice, and consequently included a count by weeks as well as a count by months.

In the period from 930 to 955, the Icelandic year was composed of 52 weeks, or alternatively of 12 months of 30 days plus four days. This gave a total year of 364 days, divided into two *misseri* or half-years. The summer *misseri* had 26 weeks plus 2 days (or alternatively 6 months plus 4 days). The winter *misseri* had 6 months of 30 days. Summer always began on Thursday, and the weeks of summer were counted from

the beginning of summer to a fixed midsummer date—a Sunday. After that date, the weeks were counted in retrogression until the beginning of the winter *misseri*. In winter, time was recorded in months, at the same time stating the time in each month by weeks and days of the week.

For some reason, people found the summer method of counting more to their liking. So they abandoned—for the first half of winter—the month count, and replaced it by a count of winter weeks. The month count continued for the last half of winter.

Winter always began on Saturday. As the Icelandic year was 1¼ days shorter than the Julian year, it was constantly changing, seasonally. In 930, summer appears to have begun at the end of April; in 955 it began, probably, in the last half of March.

About 955 the calendar was reformed by Thorstein Surt. To keep straight with the seasons, a supplementary week, *sumarauki*, was inserted in the middle of summer, every seventh year. A relation of this subject may be found in the oldest history of Iceland, *Islendingabok*, by Ari Thorgilsson.

After the adoption of Christianity in 1000, the Julian calendar of the Church was in force in ecclesiastical matters, while the Icelandic calendar was used for secular affairs. Efforts were made to modify the rules of Surt regarding the intercalation of the supplementary week, in order to establish some fixed connection between the two methods of calculation then in use. A new system was finally organized, probably in accord with advices given by the Icelandic astronomer Oddi Helgason (Stjoernŭ-Oddi—Star Oddi) who made remarkable astronomical observations about 1100-1125: the intercalation of the supplementary week was regulated so that summer always began on a Thursday between April 9 and 15.

Iceland's Ancient Calendar is still in use in Iceland along with and in spite of the Gregorian calendar. The noteworthy endurance of the Ancient Calendar is probably mainly due to the week count where every day of the week has a fixed position in the frame of the calendar.

PERSONAL CALENDAR HISTORY

By Frank Parker Stockbridge

MY great-great-grandfather, John Stockbridge, who was an officer on Washington's staff in the Revolutionary War, was born on September 1, 1752, but was only three days old on the 14th of the same month. For in 1752 England adopted the Gregorian calendar and dropped all the days of September between the 2d and the 14th. That year England and its American colonies also fell in line by changing from March 25 to January 1.

Schoolbooks tell us that George Washington was born on February 22, 1732. That's the day we celebrate. But February of the year he was born was still a part of the year 1731, and the day of the month, by the calendar then in use, was February 11. It used to be so stated in the schoolbooks of my childhood, but most folk today have forgotten that there was a radical change in our calendar less than 200 years ago.

There isn't any reason why it shouldn't be changed again. After all, the calendar is a human invention. There is nothing sacred about it.

FATHER TIME IN HARNESS

By Bruno Schwartz

(From *Photo-Facts*, Philadelphia, March, 1938)

ONE of earliest man's most important discoveries was that the seasons seemed to change with a certain regularity. That realization was the germ from which has sprung our modern calendar.

He began to reckon the passing of time by crude notches in trees, on poles or sticks, marks cut in stones. Later he piled up Druid mounds, carved totem poles and built pyramids. Today, in most civilized countries, he uses the Gregorian calendar.

Naturally man's first marking of what we now know is the earth's cycle around the sun was based entirely on his own life and work. He discovered in the temperate zone that he could till the earth, raise grain and vegetables only on a certain periodical basis. His early wheat would not grow in the winter time, nor would corn or potatoes. So for him spring was "the time of the plowing," or the "season of green" or finally the time that vegetation "springs" from the ground. Our fall season is one of the oldest seasonal names, when the leaves "fall" from the trees.

In other zones other season reckonings were used. The tropics more often described the rainy season, decided their activities from that. When they saw that so many moons had passed following the last rainy season they knew that the next one was due. The moon was used instead of the sun because of its changes of appearance in each lunar month—from first quarter to half to full and back to the vanishing point. The Eskimos worked more closely with the sun, having the long summer day and the long winter night in which the sun disappeared. The ancient Teutons had only three seasons—winter, spring and summer.

Man's first attempt at scientific reckoning was based on changes of the moon. From early times, 12 moon periods were counted as a year.

Later, when the calculations of astronomers became more precise, it was found that 12 lunar months did not fill out the year. Seasons were not identical; attempts were made to lengthen the year by adding a month.

The 13-month year found little favor. The number 13 is a prime number and is therefore indivisible into factors. Early mathematicians were interested in the triangularity of 3 and the squareness of 4. They liked the number 12 because it could be divided easily in several ways. Number 12 became a good, convenient and lucky number, 13 was considered unlucky.

In the Bible, Jacob's sons number 12. There were 12 tribes of Israel. There were 12 Apostles, 12 gates to the City of God. The Tree of Life yielded 12 manner of fruits according to the seasons. The number 12 was also more convenient because it was factorable. On the practical side 12

objects fit into a box more easily than 13. There are 12 inches to a foot, 12 pennies to a shilling.

Earliest traces of a primitive calendar were found in Egypt, where were laid the foundations of modern Western civilization. Egyptians were first to base their year on the solar system, instead of the inadequate calculation of 12 lunar months. They reckoned the year on the basis of 365 days, with 12 equal months of 30 days each. This left 5 days to be accounted for. They decided to add them on at the end of the year, and made holidays of them. They became the birthdays of five gods symbolizing Good and Evil, whom the Egyptians worshiped.

Calendar reform in Europe in 753 B.C. dates from the founding of Rome by Romulus, twin brother of Remus, born of a vestal virgin and supposedly reared by a female wolf.

Numa Pompilius succeeded Romulus as head of the Roman Empire. He reigned for 43 years, from B.C. 716 to 673, and it is he who established the Roman calendar. Up until his time, a lunar 10-month year prevailed in Rome. He rearranged the year into 12 lunar months, and began the year in the spring with the vernal equinoxes (the particular moment when night and day are of equal length).

He added the months of January and February at the end of the year, the 11th and 12th months. Pompilius observed, however, that his almanac of 12 lunar months did not run smoothly. Year by year the calendar got out of gear, and drastic alterations had to be made in it. To keep it in order, he created the College of Pontiffs, the head of which, the Pontifex Maximus, was entrusted with the special responsibility of administering the calendar. Authority for changes rested solely with the priests.

Pompilius himself fixed March 25, the spring equinox, as the first of the Roman year. This system continued for over 500 years, until 153 B.C. March 25 remained New Year's Day in a great part of the world until comparatively recently. England and America adopted January 1 as the beginning of the New Year only 187 years ago. The Bank of England still uses March 25 as the beginning of its fiscal year, and the Church of England uses the same date for the beginning of its ecclesiastical year.

Drastic changes in the Roman calendar were next made by Julius Caesar 46 years before the beginning of the Christian era. He had conquered Egypt and had brought back to Rome an Egyptian astronomer, Sosigenes. Always ambitious and an unbeliever in precedents set by custom alone, Caesar did not take the Roman calendar for granted. The calendar was part of the politics and priesthood of his time. He decided to deliver it from unscrupulous manipulation.

With Caesar enforcing his decrees, Sosigenes made scientific changes. The year became one of 365¼ days, divided into 12 months. The odd months were given 31 days, the even ones 30. In this way the five extra

days at the end of the year which the Egyptians had made holidays were redistributed among the months.

At first there was considerable opposition to the calendar of Sosigenes. There was in Rome the traditional loyalty to the moon. In addition, the arithmetic which had baffled the priests of Babylon and Greece proved too much for the priests and politicians of Rome to comprehend. Determined to remove the calendar from the hands of superstition mongers, Caesar permitted no alterations.

The seventh month was named after Julius Caesar in his honor. Following his assassination, he was succeeded by his nephew Augustus Caesar, after whom the Roman Senate named the eighth month.

Then, in order to avoid three successive 31-day months in the middle of the year, they removed the 31st day from September and November and added them to October and December, changing the established custom of 30 days for the even months. This form of the calendar remained in use for the next 300 years.

With the spread of Christianity in Europe the calendar again became altered. Into it the Christians brought the seven-day week, first introduced by the Jews, based on the Biblical story of creation. To further complicate the calendar came the celebration of Easter. The name derives from Eostre, a Teutonic goddess, whose festival was celebrated in the spring. Her name was given to the Christian festival in celebration of the Resurrection. It is now observed on the Sunday after the first full moon following the spring equinox. In the early years of the Christian Church, however, there was much controversy over the correct date of Easter.

While the calendar of Sosigenes was based on the solar system, it was becoming apparent that it too was getting out of step with the sun owing to a slight error in the length of the year. March 25, the beginning of spring was found to fall on March 21 in the year 325 A.D. Spring had retrograded into winter by four days. This retrogression increased, so that by the 16th Century, spring was being observed on March 11.

In that century Pope Gregory XIII made a final revision of the calendar which is in use to this day, now known as the Gregorian calendar.

He accepted March 21 as the beginning of spring. He issued a papal bull ordering ten days to be dropped from the calendar, bringing the date back from March 11 to the 21st. He revised the leap-year rule to a more accurate calculation by making 366 days in every year which is divisible by four, except the years numbering the centuries. They were to have the extra day only when they were divisible by four after omitting the ciphers. The year 1600 was therefore a leap year, but not 1700 or 1800. This was to compensate a small error in the calculation of allowing an exact one-fourth day over in each year.

The Gregorian reform was accepted at once by all Catholic countries,

but Great Britain and America delayed 170 more years before they accepted it in 1752, at which time eleven days had to be dropped in order to catch up with it. Parliament in England passed an Act that September 3, 1752, should become September 14, and that the legal year should begin on January 1. The colonies followed. In the course of time the dates of all historical events prior to 1752 were changed to correspond with those of the new calendar.

In the western world, particularly in England and the United States, many groups are now endeavoring to bring about an improvement over the present Gregorian calendar. These advocates of calendar reform desire its good features retained. They would not disturb the 12-month method of reckoning which is divisible into quarters, nor the seasonal periods. They would adhere to the existing chronological order.

They object to the unequal length of months, quarters, and half-years, and the lack of comparability among the various time-units of the Gregorian calendar. The change they propose is one of mathematics. They point out that the present year of 365¼ days is not exactly divisible into seven-day weeks. A new calendar is proposed which will be divisible and more convenient. It will have exactly 52 weeks, 12 months, four seasons and four quarters. In the new calendar every year is to be exactly the same, every quarter will be identical in its number of days, year after year.

Each quarter is to begin on Sunday, will end on Saturday. The first month of each quarter is to have 31 days, the second and third will have 30 days. Each month is to have the same number of weekdays, 26.

Thus the calendar would become as simple as a foot-rule or a yard-stick to memorize. It would be a great improvement in business and school life. There would be no need to consult a calendar on which each month is at variance with the previous one or the one which follows it, as is the case now. There would be no need of throwing away a calendar at the end of the old year and getting a new one.

Under this system, the calendar would become a constant measure like a clock, a scale or a tape measure. Advance dates would be more easily remembered, as would past events. Life as a whole might be greatly simplified.

HOLIDAY REVISION

By Lew Hahn, General Manager, National Retail Dry Goods Association, in *Carpet Trade Review*

PRESIDENT ROOSEVELT'S revision of the Thanksgiving Day date gave retail stores opportunity to take advantage of a prolonged Christmas shopping season. The earlier Thanksgiving was a relief to both management and employees, as well as to the shopping public. Some of the strain inevitable in the Christmas rush was lifted by the longer shopping period and the spacing out of sales. Store forces approached their peak earlier, resulting in many cases in an extra week's work for thousands of Christmas extras, and because of the longer period, the last-minute strain on store workers was alleviated.

STATISTICAL STUDIES

Preliminary Report of a Committee of the International Statistical Institute

By Dr. H. Platzer

In this preliminary report, Dr. Platzer reviews the progress toward calendar reform, and recommends that the Institute's committee continue to study the question, with particular reference to the effects of calendar irregularities on statistical compilations.

INEQUALITIES in the chronological periods of the present calendar are a very disadvantageous influence on the arrangement of statistical results. The unequal length of the several divisions of the year, especially the month, the variety in the composition of the divisions of the year with reference to the days of the week, the fluctuation of the calendar from year to year; and, finally, the mobility of Easter and of the other Church holidays depending on it, bring into statistical results serious flaws, and introduce considerable defects.

For this reason, statisticians are very much interested in the efforts to reform our obsolete chronology.

The influence of the calendar divisions of the year on statistical results, and the demands which, from the standpoint of statistics, must be made on calendar reform, in order to make the comparability of periodical statistics as accurate as possible, are shown in detail in an address which I delivered at the 20th Session of the International Statistical Institute in Madrid in 1931.

On the occasion of the 1936 Session of the International Statistical Institute in Athens, several practical proposals were appropriately made by those working for calendar reform, so that the Institute might give the matter its full consideration. It was noted that the reform of the calendar is of great importance in problems of administration and scientific statistics, especially business statistics; and it was voted that a study of the problem should be delegated to the Institute's Transport Commission, with the present writer as its reporter on this question.

Meanwhile the protracted deliberations in the League of Nations on the subject of calendar reform took an unfavorable course. On January 25, 1937, the representative of Chile in the Council of the League introduced a proposal for an international treaty concerning the reform of the calendar. The Chilean proposal sought to establish a calendar that would be invariable from year to year, with 12 months, and four equal quarters. (Each quarter has three months, 13 weeks, and 91 days. The first month contains 31 days, and the other two 30 days. Every month has 26 workdays. This will form an unchanging and perpetual calendar, where the

365th day of the year—also the 366th in leap years—is not included in the reckoning of the weeks, but is intercalated as a supplementary day without a weekday name at the end of the year; in leap years, the 366th day is placed at the end of the first half-year.)

The League of Nations submitted this plan to all governments, member and non-member, so that they could take a stand regarding it. Of the 32 states that replied, 10 accepted the proposal on principle; 5 expressed themselves against it; 6 did not take any position; 7 declared that they could not take any stand at the present time; and 4 states declared that to them the proposal seemed premature.*

After a consideration of this response in the session of the League of Nations' Council on September 16, 1937, it was voted that the question of the reform of the calendar should not be pursued further for the time being, but that the Council would hold itself ready to take up the examination of the question again at a later time, when circumstances seemed favorable.

The postponement of calendar reform by the League of Nations should not prevent the International Statistical Institute from perceiving the defects in our chronology, especially in relation to economics and related fields; or from examining the question further with a view to finding a means for the solution of the problem.

That the disadvantages of present-day chronology for modern economics are great is generally known. The present calendar stems from a primitive time, and in a social, economic, and technical respect, it has been made entirely obsolete by other conditions of vital importance produced by our own times.

From its retention spring daily disadvantages whose importance is not considered sufficiently.

The unequal lengths of months, quarters, and half-years is—as has already been amplified in the reports of the League of Nations—a source of confusion and uncertainty, which makes itself especially felt in management statistics, and in the comparison of economic statistics as a whole. To the difficulties which the instability of the calendar causes in all fields should be added the further disadvantage of a constantly variable Easter, which is also statistically important.

It is the task of statistical science to determine these deficiencies and disadvantages, and to help in their elimination, in order to correct the misleading conclusions and considerations to which they lead. It seems necessary, therefore, that our Commission should continue to deal with the question of chronology, and its significance for statistics.

*Editor's Note: The latest figures issued by the League of Nations on 45 replies from governments are: 14 states accept in principle, 6 states definitely opposed, 9 states offer no remarks, 9 states cannot define their attitude for the moment, 7 states consider the reform premature.

CURRENT PRESS COMMENT

Two Easters This Year

London Financial Times

This year's financial calendar provides a strong weapon of argument for calendar reform and a fixed Easter. The current British financial year (1939-1940) will contain two Easters, this year's falling on April 9 and next year's on March 24.

All companies and corporations whose accounts are made up to March 31 will have difficulty in comparing their current year's figures with those of a year ago. Board of Trade and other commercial statistics which are in any way affected by the incidence of Easter and the Easter holidays, will be vitiated.

Two Centuries Ago

Asheville (N. C.) Citizen

During George Washington's lifetime the western world changed from the Julian to the Gregorian calendar. Now, almost 200 years later, many Americans are campaigning for a still further streamlining of the calendar.

What the father of his country would think of the proposal it is impossible to say. But inasmuch as the hoped-for changes are exceedingly practical, he would probably approve. At any rate, we know he would not hold back because of silly sentiment.

So Moves the World

Birmingham (Ala.) News

Some day, one may confidently predict, the world will have a new calendar. The present one has been in use for 357 years. That is a pretty long time for any institution to last unchanged, considering how change-minded the world has been.

Progress toward a modern scientific revision of the calendar may be seen in the action of the United States Government in recognizing The World Calendar Association as an "educational" organization, thus permitting it to expand in ways heretofore denied.

When the Government so designated the Association, it characterized the work of the organization as a meritorious one and one leading toward a needed improvement. In other words, the United States recognized officially that the present calendar is faulty and capable of betterment.

Man has been tinkering with his calendar ever since he first climbed down out of trees and learned to throw rocks at game and to spear fish. The world still needs a little calendar revision. The change is coming. It must be coming, or else there is no such thing as progress.

Twenty-Eight Days Hath

Christian Science Monitor

Down East folk are disturbed about the inconsiderate way holidays have of coming around at the wrong times. With true Yankee shrewdness, the State of Maine seeks through legislation to make all holidays come on Monday.

But a more laudable campaign might very well be waged on a world-wide basis, a campaign for calendar reform, which promises to benefit nearly everyone. What should be done about a calendar that causes many irregularities in finance, accounting, shipping, banking, insurance, labor, investment and so on ad infinitum?

British Persistence

Windsor (England) Express

Lord Desborough, who has recently celebrated his 52d wedding anniversary, is showing his customary persistence and energy as the octogenarian champion of calendar reform. Any who oppose him would do well to remember that he swam Niagara twice as a young man—the second time to convince an incredulous American journalist that he had done it the first time.

Time to Change

Springfield (Mass.) Union

This Gregorian calendar has outlived its usefulness and should be supplanted by something more in accord with the exacting modern era.

The present calendar, it must be admitted, is unbalanced, unstable and irregular. The World Calendar is more efficient, more businesslike and more sensible.

EXCERPTS AND REVIEWS

Progress in China

By C. S. Yu, Director National Institute of Astronomy, Kunming, China.

SINCE our withdrawal from Nanking more than a year ago, we have been trying to settle down anew to our work. But with the unfavorable conditions still prevailing in our country, we are accomplishing our end only with difficulty. However, I am glad to say that culturally we are steadily recovering from the temporary setback brought about by the Japanese invasion of our country, and I can give assurance that the work already begun in China in the interest of calendar reform will be carried on with redoubled efforts.

We note with interest the success that is attending the effort to bring the women of the world into the fold of World Calendar advocates. I have forwarded printed matter on the subject to Miss Ting of the National Committee of the Y. W. C. A. of China. She is the logical person to promote calendar reform among our women.

The progress of calendar reform in many parts of the world goes to show that, in spite of the present world-wide chaos, peace and order as exemplified in the balanced structure and harmonious spirit of The World Calendar, are still fundamental, and that though momentarily eclipsed they will eventually emerge in lasting splendor.

Business Is Disturbed

By J. H. Wallis, in *Coronet*.

BUSINESS wants something done about the calendar. The calendar is inefficient; inefficiency is bad for business, and whatever hurts business hurts *you*.

Our present calendar, with its 12 months of 28 or 29, 30 or 31 days each month, with its 52 1/7 weeks, is open to some very serious objections. It is difficult, almost impossible, for business concerns to make accurate comparisons of any one month with any other month—as to income, expense, profits, losses, sales, purchases, wages, salaries, everything.

It is difficult or impossible for business to compare the months of the same year because of differences in number of days and in kind of days, for some months have four Sundays and some five, some four Mondays, Tuesdays, Wednesdays, Thursdays or Fridays, and others five.

Business knows that different days of the week have different business values. It is difficult or impossible for business to compare the same month of different years —January 1939 with January 1938, June 1937 with June 1935, for example—because the same months in different years contain different allottments of weekdays.

Accounting is really in a terrible state. Car-loadings, and bank clearances, for example. Business must make accurate comparisons; it must know where it's at. But now all is chaos.

There have been remedial proposals, and our blessing should be extended to all advocates of calendar reform, who are eagerly seeking to make things neater and smoother and more arithmetical, to standardize and to simplify. It is true that the calendar needs reform.

Comparison of Pay-Days

By H. W. Bearce

National Bureau of Standards, Washington, D. C.

TABULATION of semi-monthly pay-days, such as those of many employees of the Federal Government, reveals a practical advantage of The World Calendar which has not hitherto had attention.

A comparison of schedules of pay-days under the Gregorian calendar and under The World Calendar shows that under the Gregorian calendar pay-days may be separated by two weeks, two weeks plus one day, two weeks plus two days, or two weeks plus three days, and in a non-leap year the two pay-days in February may be separated by two weeks minus one day; whereas under The World Calendar pay-days would always be separated by two weeks plus one day, except that between the last pay-day of one quarter and the first pay-day of the next quarter there would be an interval of two weeks plus two days.

It will be noticed also that in each quar-

ter the pay-days run successively through the six weekdays in regular order.

In the following table, I have compared a tabulation of Federal pay-days for the year 1936 with the comparable dates under The World Calendar:

Gregorian Calendar 1936				World Calendar Each Year the Same		
Jan.	15,	Wed.		Jan.	16,*	Mon.
Jan.	31,	Fri.	1st	Jan.	31,	Tues.
Feb.	15,	Sat.	Quarter	Feb.	15,	Wed.
Feb.	29,	Sat.		Feb.	30,	Thurs.
Mar.	16,*	Mon.		Mar.	15,	Fri.
Mar.	31,	Tues.		Mar.	30,	Sat.
Apr.	15,	Wed.		Apr.	16,*	Mon.
Apr.	30,	Thurs	2d	Apr.	31,	Tues.
May	15,	Fri.	Quarter	May	15,	Wed.
June	1,*	Mon.		May	30,	Thurs.
June	15,	Mon.		June	15,	Fri.
June	30,	Tues.		June	30,	Sat.
July	15,	Wed.		July	16,*	Mon.
July	31,	Fri.	3d	July	31,	Tues.
Aug.	15,	Sat.	Quarter	Aug.	15,	Wed.
Aug.	31,	Mon.		Aug.	30,	Thurs.
Sept.	15,	Tues.		Sept.	15,	Fri.
Sept.	30,	Wed.		Sept.	30,	Sat.
Oct.	15,	Thurs.		Oct.	16,*	Mon.
Oct.	31,	Sat.	4th	Oct.	31,	Tues.
Nov.	16,*	Mon.	Quarter	Nov.	15,	Wed.
Nov.	30,	Mon.		Nov.	30,	Thurs.
Dec.	15,	Tues.		Dec.	15,	Fri.
Dec.	31,	Thurs.		Dec.	30,	Sat.

The asterisks have been used to indicate certain dates where the semi-monthly pay-day falls on Sunday—March 15, May 31 and November 15 under the Gregorian calendar for 1936, and also the 15th of the first month of each quarter under The World Calendar. When this occurs, it is customary to pay on Monday following.

While there is nothing particularly new in the feature here pointed out, I do not recall ever having seen it pointed out heretofore. It shows rather neatly the symmetry and balance of The World Calendar.

It's an Opportune Time

By F. W. Adams

In *Zion's Herald*, Boston

WE hope that some leader will look above war, trade and lost colonies, to start this movement that might again unite mankind. Such a thing was done in setting up the Universal Postal Union, the world-wide Red Cross and the uniform law of nations for ships at sea. Why not for a more convenient calendar?

Since 14 nations now favor the proposed World Calendar, it is hoped that world leaders will also soon adopt the fixed Easter. It seems a lack of wisdom not to change now.

It would be easy by vote or decree to rectify this error of a wandering Easter. Similar bad starts have been corrected. For instance, a wrong beginning was made in the English system of weights and measures. It is now in process of being made more useful by gradual adoption of the decimal system.

More Monday Holidays

By George Jean Nathan

In *The Sentinel*, Buffalo, N. Y.

NOW that President Roosevelt has changed Thanksgiving Day, it may be a good idea to consider the whole holiday situation and examine other changes.

I recommend the changing of the Fourth of July, Independence Day, the most significant and important of our national holidays. Armistice Day should be got rid of altogether.

Lincoln's and Washington's birthdays are now celebrated only ten days apart, and they occur in the shortest month.

All national, state, religious and other holidays should be taken up for consideration. These include Arbor Day, Army Day, Navy Day, Mother's Day and Father's Day, Forefather's Day (celebrated in New England), Lee's Birthday and Confederate Memorial Day (celebrated in the Southern states), Lafayette Day (observed in ten states), Woodrow Wilson's Birthday (celebrated in South Carolina), to say nothing of Good Friday, sixteen Jewish holidays, Shrove Tuesday (observed as Mardi Gras), and numerous election and primary days.

Less widely observed are: Ash Wednesday, Ascension Day, three Rogation Days, Ember Days, Battle of New Orleans Day (Louisiana), Pioneer Day (Utah), Texas Independence Day, Seward Day (Alaska), General Forrest Day (Tennessee), Dr. Barbosa's Birthday (Puerto Rico), Kamehameha Day (Hawaii), Rizal Day (Philippines), Rhode Island's Independence Day, Alabama's Fraternal Day, New Hampshire's Fast Day, North Carolina's Mecklenburg Day, and finally Jefferson Davis' Birthday, observed in Southern states.

FROM THE MAIL BAG

I cannot see why there would be any objection to The World Calendar, but international action to assure its uniform adoption would certainly be necessary. In any event, it is unquestionably superior and more practical than the 13-month plan. —Thos. H. McInnerney, Pres. National Dairy Products Corp.

It is our opinion that the time has come for the governments of all countries to take up calendar reform, since private trade organizations, economy, science, etc., have all often demanded such a reform.—Dr. Kurt Bloemers, Sec. Gen., International Hotelmen's Assn., Cologne.

Personally I appreciate the merits of calendar reform and will put this matter to our Chamber of Commerce at the next meeting.—Joakim Puhk, Tallinn, Estonia.

I am a warm advocate of calendar reform, and am writing an article on the subject in a popular scientific paper *Science and Culture* which I edit.—Dr. M. N. Saha, Allahabad Univ., Calcutta.

I have been receiving and enjoying the *Journal* for years.—Prof. W. Rue Murray, Franklin and Marshall College.

This is a matter which has been discussed with faculty and students in our institution and so far as I can find there have been no objections raised from any source.—Mark Ellingson, Pres., Athenaeum and Mechanics Inst., Rochester, N. Y.

The World Calendar is a vast improvement over what has been or is.—Prof. C. J. Keyser, Columbia Univ.

This, of course, is a most interesting project and the reform if once put in effect would undoubtedly make many things much simpler.—Charles Bolduan, M.D., Dir., Bur. of Health Edu., City of N. Y.

The World Calendar of 12 months should be adopted. It is simple, sensible, practicable.—Prof. J. W. Bailey, Berkeley, Calif.

The present calendar is inadequate for modern living and business.—H. S. Young, Ins. Adjuster, Lincoln Park, Pa.

Your plan is of particular interest to the clergy and they are all much enthused about it after it has been explained to them.—Rev. R. P. Galbraith, Buffalo.

Social inertia alone prevents the reformation of the calendar. Much annoyance would be removed thereby.—G. F. Arps, Prof. of Psychology, Ohio State Univ.

My vote is back of your venture, and unreservedly. If mankind were not such arrant fools this great reform would have been consummated many years ago. To comment on its merits would be carrying coals to Newcastle. To criticize it seems futile, for it impresses me as being just as near the ideal as we mortals can hope to reach considering the factors that enter into computation.—L. L. Rice, Ph. D., Dir., Nakanawa Camps, Mayland, Tenn.

Planning of time is as important in education as it is in other fields. The World Calendar would be of great help.—A. M. Morrison, Educator, Tuckahoe, N. Y.

The World Calendar you propose seems to be logical and a great improvement over the present one. It has definite advantages over the 13-month calendar.—Chas. F. Noyes, Realtor, N. Y. C.

I shall be glad to study your publications and place them in our College Library.—J. W. Cammack, Pres., Averett College, Danville, Va.

From what I know of the proposal, I am glad to lend it my support.—Harry Baldwin, Treas., Canadian Broadcasting Corp.

Administration of all Educational Institutions will be greatly simplified and benefited by The World Calendar. I earnestly advocate its adoption.—I. I. Cammack, Educator, Los Angeles.

After adoption of The World Calendar children leaving grade school will have it memorized as they do the clock, and future generations will be amazed that this calendar was not adopted generations earlier. —M. J. Spinks, Methodist Hospital, Dallas.

It is my sincere belief that The World Calendar will remove a considerable amount of annoying friction.—C. B. Vincent, Consul Gen. of Haiti, N. Y.

Have been greatly interested in this subject ever since I read the first material you sent me.—J. A. Davies, Asst. Librn., St. Francis Seminary, St. Francis, Wis.

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EDITORIAL PARAGRAPHS

Evolution of the calendar for more than 6000 years is shown in an exhibit at the Museum of Science and Industry, Rockefeller Center.—New York *Herald-Tribune.*

The reasons for which the Chambers of Commerce and the National Chamber of Trade have persistently urged the Government to take action to secure reform of the calendar are certainly weighty enough to justify a measure which would be as simple and effective as Daylight Saving.—Lansdown (England) *Stroud Journal.*

Should The World Calendar plan be adopted, Washington's birthday might be turned back to February 11, the date the first President and father of his country observed as his birthday throughout most of his life.—Oklahoma City *News.*

Advantages of The World Calendar are manifold.—New York *Rockefeller Center Magazine.*

That the interest in the reform of the calendar is becoming widespread is indicated by an article written by Rev. Swami Omkar, a Christian of India and head of an Indian *ashram.*—New York *Federal Council Bulletin.*

What The World Calendar would mean to the business world and the tourist and travel world, one can imagine. Far-reaching reforms come slowly, of course, but it looks as though The World Calendar is well on the way.—Asheville *Citizen.*

This question of the date of Easter is a specifically ecclesiastical one, and surely if only by reason of the origin of the "holiday" the decision rests with the Church. —Scarborough (Scotland) *Evening News.*

The United States Government has recognized The World Calendar Association as an "educational" organization, which gives it legal right to expand activities heretofore limited.—Boise (Idaho) *Statesman.*

The benefits which calendar reform offers to bankers, investors, statisticians, insurance companies, employers, clergymen and historians are shown in an exhibition at Rockefeller Center. — Fort Dodge (Iowa) *Messenger-Chronicle.*

In so important a matter as calendar reform, some of the bodies necessary to general assent move slowly, but the impression has been abroad now for several years that very substantial agreement is already in effect.—Lansing (Mich.) *State Journal.*

Calendar reform has been advocated for 100 years.—Tully (N. Y.) *Times.*

General acceptance of reform awaits only an active lead from the British Government and all the opposition inspired by sheer conservatism would rapidly melt away.—Shields (England) *Daily Gazette.*

If confusion is a stimulus to calendar reform, the time seems to be ripe for Europe, the Orient and the United States to fall in line.—Syracuse (N. Y.) *Herald.*

Life is getting more complicated all the time. Everything we can do to remove needless annoyances will be a big help. Changing the calendar is a worth-while proposal.—Royal Oak (Mich.) *Daily Tribune.*

Awkward occurrence of three national holidays in the month of November afforded a shining opportunity to get in some good licks for calendar reform.—Waterbury (Conn.) *American.*

Easter fell on April 9, and in 1940 it will fall on March 24, and there will thus be two Easters in the present financial year and in the trading year of all companies whose accounts are made up to March 31. —Cardiff (Wales) *South Wales Echo.*

Before calendar reform can be effected, a great deal of public inertia must be overcome.—Dixon (Ill.) *Telegraph.*

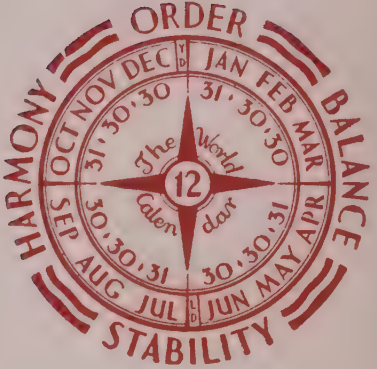
The new calendar does not involve any change in the number of months, the quarters will all be equal and the other changes are minor so that there will be no problem to which people will have to adjust themselves.—Waterville (Me.) *Sentinel.*

If the new calendar had been adopted this year, we should be wearing permanent almanacs printed on watches or cigarette cases.—Highland (England) *News.*

For years agitation has been carried on for a revision of the calendar to make it more convenient to use. — Great Falls (Mont.) *Tribune.*

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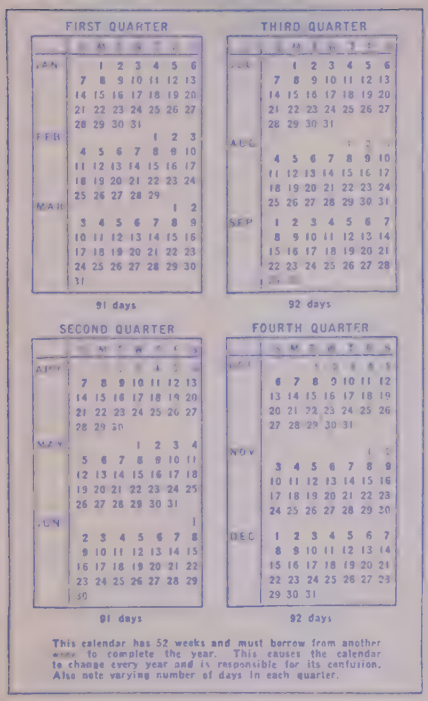
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A LEAP YEAR

PRESENT GREGORIAN CALENDAR



PROPOSED WORLD CALENDAR



EACH YEAR DIFFERENT

This calendar is always different from year to year.

The quarters are unequal in length. In leap years the first half-year has 182 days; the second, 184 days.

Each quarter begins and ends on a different day of the week.

Each month begins and ends on a different weekday.

The months have a varying number of weekdays.

Each year begins on a different weekday.

This calendar is unbalanced in structure, unstable in form, and irregular in arrangement.

SOON YOU WILL BE DISCARDING THIS OBSOLETE CALENDAR.

EACH YEAR THE SAME

This 12-month equal-quarter calendar is good for every year.

The quarters are equal in length.

Each quarter begins on Sunday and ends on Saturday, contains 3 months—13 weeks—91 days.

Month-dates always fall on the same weekdays. Each month has 26 *weekdays*—plus Sundays.

Each year begins on Sunday.

Year-End Day and Leap-Year Day, the extra Saturdays, are world-holidays.

This revised calendar is balanced in structure, perpetual in form, harmonious in arrangement.

SOON YOU WILL BE USING THIS UP-TO-DATE CALENDAR.

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LET US ENCOMPASS THE EARTH WITH A NEW ORDER OF TIME

VOL. X FIRST QUARTER 1940 No. 1

ON April 14, the Pan American Union celebrates its Golden Anniversary! The people of the 21 republics of the Western Hemisphere, which form its official entity, can look back gratefully on half a century of closer cooperation among themselves, increased American commerce and strengthened intellectual and cultural ties. President Roosevelt in proclaiming April 14 Pan American Day said: "It is most appropriate that the people of the United States should commemorate this significant occasion and thereby testify to the close bonds of friendship that unite the Government and people of the United States with those of the other republics of the American Continent."

Calendar reformers may be permitted pardonable pride in the Union's achievement, since many nations which comprise it have long been in the vanguard of the movement for calendar simplification. The Government of Chile in 1937 assumed an energetic leadership for calendar improvement. It received the unanimous approval of the League of Nations' Council to submit a draft convention on The World Calendar to States Members of the League and non-member States. Other republics of Latin America were not long in following Chile's lead, so that among the 14 nations which have approved The World Calendar are to be found Brazil, Mexico, Panama, Peru and Uruguay—six Pan American states.

We have, however, a more personal and compelling reason for sharing in the joy of the Union's achievement. Dr. L. S. Rowe, for many years its guiding spirit, has long been an enthusiastic calendar reformer. He has been a member of The World Calendar Association since its early beginning, and for the past five years Honorary President of the Comite Latino-Americano del Calendario Mundial, the committee which coordinates the activities of national calendar reform organizations in Argentina, Bolivia, Brazil, Chile, Colombia, Costa Rica, Cuba, Dominican Republic, Ecuador, Mexico, Panama, Paraguay, Peru, Uruguay and Venezuela.

The membership of The World Calendar Association joins with the calendar reform organizations of the Americas in heartily wishing Dr. Rowe and the Pan American Union increasing success in their Inter-American friendship, peace and understanding.

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Journal of
CALENDAR REFORM

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1940

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CHARLES C. SUTTER, Editor
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CALENDARS IN THE SKY

By James Stokley

Director, Buhl Planetarium, Pittsburgh

(From *Sky*, January, 1940)

THOUGH at this time, the beginning of the year, the existence of the calendar is called to our attention, most of us are inclined to take it for granted, as we do so many useful institutions. The fact that the year 1940 is just beginning seems as natural as that a stone falls to the ground when dropped.

But we must remember that there are many different calendars in use today in other parts of the world. Among the Jews, for instance, this is not 1940, but 5700. Their new year will not arrive until October 2. To the Mohammedans, this is the year 1358, until February 9, when 1359 commences. In the Japanese era, this is 2600, which began on January 1.

If we consider calendars not used today, but of great historical interest, we find that in the Roman calendar this month marks the beginning, on January 14 of the year 2693 A.U.C. The letters stand for *ab urbe condita* or "from the founding of the city." In the era of Nabonassar, used by the Babylonians, the year is almost the same, for 2689 will start on May 8. According to the ancient Greek calendar, the year 2252 will start on March 21, the day of the beginning of spring.

This shows how many different schemes man has tried in counting his days. The fact that even today further changes are being urged by large and distinguished groups makes it clear that despite this long period of evolution, our calendar is still imperfect. As a matter of fact, a really perfect calendar is impossible. It has to be a compromise, for it attempts to reconcile natural periods which are not reconcilable. The greatest accuracy combined with greatest convenience—these are the things to be desired.

The day is not long enough to indicate conveniently large intervals of time, and thus arises the need for longer units, such as the month and the year. Most of our measures use arbitrary units, which are chosen to be commensurable—an even number of the smaller ones are contained in the larger, such as 100 cents in a dollar, 12 inches in a foot or 16 ounces in a pound. With the small units of time, the hour, minute and second, also arbitrary, this is the case, but the longer units are determined naturally. The day is the time it takes the earth to turn on its axis; the month, originally, was the time taken for the moon to go around the earth; while the year is the interval during which the earth makes a trip around the sun. It happens that these units are all incommensurable, that is, it is impossible to express one precisely in terms of the other, no matter how complicated a fraction we use. Consequently, we must try to make them fit as closely

as possible and without using some impracticable proceeding to do it.

Primitive man, not able to count very high numbers, found the changing phases of the moon useful to indicate long periods of time. Later, the changes in the sun's daily path were recognized as keeping step with the seasons, and these were used for a calendar. Thus, there are three distinct types of calendar: the lunar, which keeps step with the moon and disregards the sun and seasons; the solar, which is in step with the seasons, but ignores the moon; and the luni-solar, which combines the other two. All three types are in use today among various peoples.

Of the many different kinds of months, two can be shown in a planetarium. The *sidereal month* is the time that the moon takes to travel around the sky from one position among the stars back to that position. This is about 27 1/3 days. But, when a sidereal month has passed, the moon is not at the same phase that it was at the start. The phases depend on the position of the moon with respect to the sun, which is also, apparently, moving eastward among the stars. For example, the moon will be at first quarter on January 17, while it is in the constellation of Pisces, the Fishes. Then, as always when in this phase, it will be a quarter of the way around the sky from the sun, towards the east. One sidereal month later, on February 14, it will be in that part of the sky again. But during that interval, the sun has moved to the east by nearly a twelfth of the distance around the sky, and the moon is therefore nearer to it and in a crescent phase. Not until February 16 will it be at first quarter again. This is a little over 29½ days after it had that phase previously, a period which is called the *synodic month*, and is well known, because the phases of the moon are so obvious, and because the tides keep in step with it.

Most old calendars, and the Mohammedan among present-day ones, are based on the synodic month. The Mohammedans have 12 months each year, alternately 29 and 30 days long, giving a year of 354 days. This calendar loses 11 days per year, or one year every 33. When a Mohammedan says that he is 68 years old, it means that he has seen only 66 summers. This calendar does not keep in step with the seasons, but in most Moslem countries there is little seasonal variation, so this is not important. The calendar starts with the Hegira, when Mohammed fled from Mecca in 622 A.D.

Just as there are two different kinds of month, so are there two principal kinds of year, the *sidereal* and the *tropical*. The first is the time it takes the earth to complete a trip around the sun, or the time it apparently takes the sun to travel from one position among the stars back to the same position. This is roughly 365¼ days, or, more accurately, 365 days, 6 hours, 9 minutes and 9.5 seconds. But the seasons are determined by the sun's position with respect to the equator. When, on its northward journey, it crosses the celestial equator, spring commences. This is the vernal

equinox. But the entire starry sky slips around the sun's path, the ecliptic, once every 25,800 years because of the precession of the equinoxes. Thus, the vernal equinox moves forward each year to meet the sun, which reaches that point 21 minutes, 13.5 seconds before it has made a complete circuit of the sky. The period that the sun requires to travel from the vernal equinox back to it again is called the tropical year, and is 365 days, 5 hours, 48 minutes, 46 seconds long. This is what most of us mean when we refer to the year, although the ancient Egyptians used the sidereal year in their calendar.

Their year began originally when the sun had moved far enough to the east of Sirius, the Dog Star, for that star to be seen above the eastern horizon just before sunrise. About 2776 B.C., this happened to come a few days before the annual flood of the Nile, an event upon which their activities depended, and which they could not predict by any other means. There is little seasonal change in Egypt, and the floods are caused by the melting of snows in mountains far to the south, of which the Egyptians had no knowledge. They divided their year into 12 months of 30 days each, and added five extra days at the end. However, this did not take care of the extra fraction of nearly a quarter of a day, and so, four years after the calendar was adopted, the rising of Sirius just before the sun came a day later, according to their calendar. After 1460 years, called a Sothic period (after Sothis, their name for Sirius), their dates had slipped completely around the seasons.

The Jewish calendar, like the ecclesiastical calendar of the Christian Church, combines the lunar and solar calendars. That of the Jews has 12 months each year, alternately 29 and 30 days in length, so that the months keep step with the moon. To keep in step with the sun, a "leap" or "intercalary" month is added, usually every third year. In 19 years there are seven of these leap years with extra months. This calendar begins with the supposed date of Creation, 3761 B.C.

The original Roman calendar was of this sort, but the Romans had no regular rules for the extra months, and the calendar became a source of political intrigue and was much abused. About 50 B.C., the vernal equinox came in December. To correct these evils, and to prevent their repetition, Julius Caesar, in 45 B.C., introduced the Julian calendar, with the advice of the astronomer Sosigenes. His principal changes were: (1) A year of 445 days, often referred to as "the year of confusion," was observed, to bring the equinox back to March 25. (2) The length of the year was set at 365¼ days, as accurately as it could be determined at that date. (3) The moon was disregarded entirely. Ten days were added. January, Sextilis (August) and December received two days, April, June, September and November one only. February retained its 28 days. The months thus became the same as we have them today. (4) To account for the extra

quarter of a day, an intercalary day was observed every fourth year, being added to February, to make that month 29 days long.

Unfortunately, Julius Caesar did not live to see his calendar safely started on its course. He was assassinated in B.C. 44 and the Roman Senate honored his memory by calling Quintilis, Julius, or as we now say July. His successor, Augustus Caesar, corrected some errors made by the pontiffs in carrying out the Julian calendar. The Roman Senate took the opportunity of perpetuating Augustus' name by changing the month, Sextilis, to August.

Such was the calendar used, in some parts of the world, until a few years ago. But the Julian year of 365 days, 6 hours, is about 11 minutes, 14 seconds too long. By 1582 this difference had accumulated to a total of about 10 days, and the equinox came on March 11. Had this continued, it would have meant that Easter, and other religious festivals connected with it, would eventually have come in winter, so Pope Gregory XIII made another reform, with the aid of the astronomer Christopher Clavius. This was ordered in a Papal Bull dated February 24, 1582. It provided principally that: (1) The day after October 4, 1582, should be called October 15, thus dropping 10 days completely, and bringing the date of the vernal equinox back to the 21st of March, where it had been around 325 A.D., the date of the Council of Nicaea, which had set the rules for determining Easter. (2) Instead of having a leap year every fourth year without exception, century years would only be leap years if divisible by 400. (Thus 1900 was not a leap year, but 2000 will be one, as was 1600. As in the Julian calendar, other years would be leap years if divisible by four.)

This makes the average length of the Gregorian year 365 days, 5 hours, 49 minutes, 12 seconds—only 26 seconds too long. It was adopted in Roman Catholic countries immediately, but others lagged. Not until 1752 was it adopted in England, while Russia did not adopt it until 1918.

So far another unit, the week, has not been mentioned. This corresponds to no natural unit of time, but is of astrological, rather than astronomical, origin, being based on the old belief in a supposed relationship between planets and their positions and terrestrial affairs. The Babylonians recognized seven "planets," all supposedly revolving around the earth. In order of distance, starting with the most remote, they were Saturn, Jupiter, Mars, Sun, Venus, Mercury, and the Moon. They thought that each hour of each day was ruled by one of them. Thus Saturn was first, Jupiter second, and so on. Then it started over, with Saturn ruling the eighth hour, Jupiter the ninth, and so on, to the end of the day, with Mars for the 24th hour. This then brought the sun to the first hour of the second day, and again the list went around more than three times. That day ended with Mercury and the next started with the moon. The fourth day started with Mars, the fifth with Mercury, the sixth with Jupiter and the seventh

with Venus. The first hour of the eighth day began with Saturn again, so the cycle started over. As each day was supposed to be particularly under the control of the planet ruling the first hour, the days were named after it. These names were transmitted through the Jews and the Romans into Europe, and through the Saxons into England. The following table shows the similarity of the names in various languages.

Celestial Body	*Latin*	*Saxon*	*English*	*French*	*German*
Sun	Dies Solis	Sunnan-daeg	Sunday	Dimanche	Sonntag
Moon	Dies Lunae	Monan-daeg	Monday	Lundi	Montag
Mars	Dies Martis	Tiwes-daeg	Tuesday	Mardi	Dienstag
Mercury	Dies Mercurii	Wodens-daeg	Wednesday	Mercredi	Mittwoche
Jupiter	Dies Jovis	Thors-daeg	Thursday	Jeudi	Donnerstag
Venus	Dies Veneris	Frigas-daeg	Friday	Vendredi	Freitag
Saturn	Dies Saturni	Saeter-daeg	Saturday	Samedi	Samstag

(Tiw, Woden, Thor and Friga were Saxon gods, corresponding to Mars, Mercury, Jupiter and Venus in the Roman mythology.)

At present, the slight remaining error in the Gregorian calendar now has accumulated to about three hours. Not until after 3000 years have passed will it amount to a day, so it is not very serious. However, calendar reforms are now being urged, chiefly concerning the lengths of the months, in order to have the same date every year fall on the same day of the week and to have every month, or every quarter, the same.

In The World Calendar, the months differ in length, but not as much as in the Gregorian calendar, and the quarters are the same. Each quarter starts on Sunday and ends on Saturday. The first month of each quarter (January, April, July and October) has 31 days; the others 30. The World Calendar uses also a "Year-End Day" every year at the end of December, and a "Leap-Year Day," when required, at the end of June. It could be adopted with little disturbance in a year that would otherwise start on Sunday, such as 1950. Almost as convenient would be a year such as 1945, when July will begin on a Sunday, and then The World Calendar could be adopted beginning the second half of the year.*

Possibly the simplest form of calendar, however, is the one used by astronomers in counting the "Julian Day." It has nothing to do with Julius Caesar, but was introduced in 1582 by Joseph Scaliger and named in honor of his father, whose first name was also Julius. This is simply the total number of days that have elapsed since January 1, 4713 B.C. The reason for choosing that date was that then three different cycles used in time measurement all began together. By this count January 1, 1940, is referred to as J.D. 2,429,630.

*EDITOR'S NOTE: The World Calendar can be placed in operation on the last day of 1944. December 30 in that year falls on a Saturday as it does in The World Calendar. The next day, December 31, would be considered as Year-End Day, an extra Saturday World Holiday. The following day, Sunday, January 1, 1945, would then be the first day of The World Calendar.

UNIFORM GOVERNMENT RECORDS

An Interview with Walter R. Sharp, Professor of Political Science at the University of Wisconsin

By JAMES L. C. FORD

"GOVERNMENT in the modern world is big business in every sense of the term. It is faced by the same problems as private business, problems often made more complex by complicated organization. As a result, the keeping of complete and uniform records has become a vital factor in every field of public administration. Calendar reform can aid in standardizing and simplifying these records."

Walter Rice Sharp, professor of political science at the University of Wisconsin, author of several books on the subject, and recognized authority on civil service and government administration, reached into his files and pulled out some statistics to emphasize the growing importance of government in the world's democracies today.

"In the United States one person out of every nine, excluding those on work relief, is in government service," Professor Sharp said. "That totals up to 3,800,000 individuals in this country alone. In France the number of public employees, including those engaged in local civil government but excluding the army and navy, reaches at least a million. England also has approximately a million people working for the national and local administrations. This great army of public servants is engaged in a multitude of tasks and innumerable records must be furnished the public on the work accomplished.

"That is why I have followed the intelligent efforts of The World Calendar Association to advance the movement for calendar reform with increasing interest. For calendar reform offers greater efficiency and practical advantages in standardized public reports."

The volume of paper work, commonly known as red tape, in governmental administration is proverbial. Professor Sharp pointed out that it directly affects not only financial and budget affairs for each individual bureau and department but that its importance is especially felt in other definite fields such as personnel records of every kind, yearly and monthly reports, bulletins for public information, and government research.

"To get an intelligent picture of the extent of administrative problems of this nature," Professor Sharp commented, "just consider present activities of government in the United States. Exclusive of work relief, payrolls, federal, state, and local governmental units handled a salary and wage budget of $5,400,000,000 (B) in 1937. That's equivalent to one-eighth of the amount of salaries and wages paid in the United States for that year.

"Or to look at it from another light. In New York City alone there are

nearly 140,000 full-time municipal employees. When the Federal Government is examined, amazing ramifications in the field of public business are revealed. There is the Post Office Department, the Tennessee Valley Authority, the Panama Canal, the Federal Home Loan Board, the Farm Credit Administration, the United States Shipping Board, the Government Printing Office, the Federal Deposit Insurance Corporation—to name only a few. In state government there are the state universities, teachers' retirement funds, state liquor monopolies. Municipalities operate schools, heating plants, gas, light and power plants, transportation systems, and water works.

"The value of calendar reform in private business of almost every nature has been recognized. When the extent of public activities conducted by local, state, and national governments is realized, it must also be conceded that here is a vast field in which calendar reform could be of benefit."

The World Calendar's perpetual and balanced form, equal quarters with monthly dates falling on the same weekdays, division of each month into 26 weekdays—these are practical advantages in any form of statistical work and Professor Sharp enumerated these features as helpful devices for the record-keeping inherent in public administration. He was quick to emphasize their value not only so far as the government departments are concerned but also to the public at large.

"The average citizen and voter," he said, "needs information about his government and its activities. No person can participate intelligently in a democratic country without some knowledge of its fundamental operations. The only way he can get this data is through bulletins and reports issued by governmental agencies or through statements and speeches by government officials. This information will be incomprehensible to Mr. and Mrs. John Q. Public unless it is presented in simple and interesting form. Simple records, easily compared from year to year or from month to month or week to week, are necessary. The farmer concerned with crop reports, the broker dependent upon treasury figures, the grocer wondering about his sales tax—all these citizens and their livelihood are inseparably related to these records which calendar reform can simplify and standardize."

As for the government administrator, Professor Sharp emphasized the variety of questions which necessitate uniform and trustworthy records in the field of civil service alone and personnel management.

"Records have to be kept from the time a man is employed until he leaves," Professor Sharp said. "Promotion often is by seniority—this is particularly true of the French civil service where each man has to work his way up through each grade. Records have to be kept for pension systems, days off, and sickness. Holidays and vacations mean more figuring for the administrator who has to know from month to month what his man-power is going to be and what seasonal variations may demand.

"In planning in advance, in checking against past years, what could be more helpful than a calendar by which you could check instantly and accurately from past experience. To take an example, if the official is with the Treasury Department, he can look at his figures for last year and see that on Friday, March 15, he needed 400 field workers to figure income tax returns. To carry the example further, he will realize that on the following week he will have to have 50 extra clerks to tabulate returns. Then, finally, he can take his records for each week in the spring of 1939 and check them against *exactly* comparable weeks in the spring of 1938. You can see now how helpful uniform records, based on a perpetual and balanced calendar would be."

Holidays and vacations, standardized on the same date, also would aid the government administrator, the political science expert declared. In the past, with Christmas holiday seasons varying, with the Fourth of July sometimes on a Monday and sometimes on a Friday, the bureau head was confronted with new policy decisions for each succeeding holiday.

"Under the old accidental calendar, Thanksgiving Day, which always comes on the last Thursday of November, might be November 26 or November 27 or November 30 or some other date. Under The World Calendar plan the last Thursday will always fall on November 30. The bureau head can plan accordingly and grant time off on a definite schedule."

It has recently been suggested that the President in his annual Thanksgiving Day Proclamation this year might well designate the last Monday, November 25. Its observance on this day will afford the opportunity for all to enjoy a 3-day week-end. Thanksgiving would become a blessing to both employee and employer in that it would give the former a desired long holiday and the latter would avoid an awkward break in the week.

Professor Sharp reached up and took down a book from the tall cases which line his office up to the ceiling. He thumbed through it until he found the page he wanted and then thrust it at me.

"Every political scientist appreciates the existing difficulties in handling of public records and the value of such records," Professor Sharp declared emphatically. "I've told you why I think efficiency is necessary and how calendar reform might help. Here's what Austin MacDonald, professor of political science at the University of California, says in his *American City Government and Administration*: 'There are, in fact, many reasons why careful records should be kept, showing the quantity and quality of work done by every employee in the municipal service, the number of unexcused cases of lateness and absence, and other important aspects of his service. Even in their present crude form these records serve as the basis not only for promotions, but also for increases in pay, dismissals, transfers, requests by employees for vacations or leaves of absence. They enable every department head to obtain some knowledge of the weak

spots in his organization, and to set about the task of improving its efficiency in an intelligent manner.' The uniformity which calendar reform makes possible certainly would be an assistance in improving efficiency."

Drawing upon his past experience in France in research work for the Social Science Research Council of New York, Professor Sharp mentioned the troubles arising from slipshod records.

"Working in France, the social investigator soon discovers that officialdom has not as yet been greatly impressed by the value of keeping accurate, comparable statistics on personnel practices. The reform made possible by The World Calendar not only can improve present practices in France and other countries but it can stimulate keeping of better records because with increased simplicity and comparability will come greater demand from the public and administrators alike."

Regularity, stability, efficiency—these characteristics of The World Calendar which have led to its support by leaders in every field are the features which recommend it to the political scientist. He added that there is an advantage in The World Calendar, not possible in any 13-month or other plan, in that the familiar 12 months will be retained, and the change will be so slight as to make comparisons of vital statistics between the old Gregorian and the proposed new World Calendar easy.

Professor Sharp expressed his belief in the usefulness of The World Calendar as our interview closed. "Uniformity and efficiency—that's what public records need. You know, Sir William Beveridge said once that 'Democracy, if it knows its business, has no reason to fear bureaucracy.' If democracy is going to make bureaucracy its servant instead of its master, it is faced with a most complicated task. Criticism is indispensable, if the administration of the modern state is to function as a genuine democracy. This criticism must be grounded upon a full knowledge of the facts involved; hence the importance of clear and accurate records. And that's where calendar reform comes in!"

ADVISORY COMMITTEE

SEVERAL changes have occurred in the American Advisory Committee of The World Calendar Association during the past year and are printed on page 47 of this issue. The Committee now numbers 19 individuals.

Included are representatives of major committees of the General Federation of Women's Clubs. Mrs. Gustav Ketterer, Chairman of the Department of Legislation of the Federation, takes a place on the board, which is already notably represented by other women of that organization. Mrs. Frederic Beggs heads the Department of International Relations. The leader of the Department of American Citizenship, Mrs. Frederick H. Clausen, is on the Committee. Mrs. Rowland H. Latham, Chairman of the Federation's Committee on Calendar Reform, and the veteran women's leader, Dr. Clara B. Burdette, are members.

Big business is represented in the person of Julius F. Stone, well-known midwest industrialist and banker.

It is exceedingly regrettable that ill health forces the retirement from the Committee of the distinguished American attorney, George Gordon Battle. His services to the cause of calendar reform are well known, and although he is forced to relinquish his active support his interest will not be diminished.

A recent law passed in Turkey obligating all citizens to adopt a family name accounts for the change in name of our distinguished Turkish colleague, Dr. Ihsan Ali. He will continue to head the Turkish Committee on Calendar Reform under the name of Dr. M. I. Dereoglu.

WORLD CONFERENCE

By Abbé Chauve-Bertrand

Eminent Roman Catholic Authority on the Calendar

(Translated by the Reverend Edward S. Schwegler, D.D.)

THE idea of some sort of extraordinary, universal conference is in the air. All over the globe the spirits of good-will are waiting for a sign. Such an assembly, called together on the basis of a common understanding by Pope Pius XII and the King of Italy, or, for example, by President Roosevelt or the League of Nations, could be immensely useful. It could examine many grave and urgent questions, and also many minor ones of secondary importance.

Once such a conference were convened, nothing could be better, as a change from possibly heated debates on other subjects, to transfer the discussion at certain intervals to some question that could retain everyone's attention without clashing against anyone's interests. And what question could fill such a role more easily than that of calendar reform?

The discussion of the problem would bring together the heads or delegates of the different states, no matter what their political organization might be: kingdoms, republics, empires, democracies, dictatorships, etc.; and those of the principal churches or religions, no matter what their theology: Catholic, Protestant, Orthodox, Mohammedan, Buddhist, etc. Would this not result in a very impressive "ecumenical council" of modern times, indicating that humanity wanted to examine its conscience?

When the states and the churches saw that they would be able to understand each other regarding a universal calendar, another step would be suggested: the adoption of what is known as the "international Sunday." Why could not all the churches hold their religious services on the same day? Some laudable beginnings towards this end can already be mentioned. In Turkey and India, and perhaps also elsewhere, the Mohammedans, although continuing their devotions on Friday, also observe Sunday; and among the Jews, the Israelite Liberal Union founded by Rabbi Louis-Germain Levy has inaugurated Sunday services.

As far as holidays are concerned, each church and each nation would only have to transcribe its religious and civil holidays to the reformed calendar, together with its various anniversaries. An example of how this might be done is to be found in *The World Calendar Almanac* by P. W. Wilson. With such a synthesis on hand, we could study the origin and meaning of the different holidays and possibly make some of them coincide. For example, a world-wide agreement might be reached for celebrating the beginning of the year on the same day. That day could very well correspond to the Christian Christmas, which comes at the same time as

the old winter solstice, formerly celebrated by the ancient pagan cults.*

Such a study would make us see the significance of many rites and symbolical facts and rediscover their social and psychological value. As things are, we perish from routine and lack of interest. Is it too much to hope that Catholics, the Orthodox and Protestants, by proclaiming what they have in common rather than what divides them, might accelerate a rapprochment already begun? Would the monotheistic religions—Judaism, Christianity, Islamism—have any difficulty in realizing that at least the first article of their *Credo* is the same? Could not these great religions, whilst conserving their secondary, though important, divergences, concert their efforts, and, with the aid of secular governments, develop or restore in all disaffected consciences the fundamental beliefs and the indispensable concepts of morality? Agreement in calendrical matters could be a first step towards united action along these further lines.

The need for such action is only too evident. The fundamental concepts of morality are especially indispensable. As a result of their breakdown, the basic ideas of a social order and of society itself are being called into question. To counteract this debacle, some heads of states are recommending a return to force, whilst others, standing terrified at the brink of the abyss—where, if these things continue, everything threatens to collapse—others are making continued and increasing appeals to those spiritual realities without which civilization would be impossible. Have we not heard it said many times that the social question is a religious one—or a moral one—and that peace between nations can be established only through justice and good-will? *Opus Justitiæ Pax* is the motto of our new Pope, Pius XII. "To peace through justice." Let us incidentally render homage to Mr. Roosevelt, the eminent President of the United States, for having proclaimed that faith and churches are essential to democracy. "Faith," wrote Fustel de Cosanges, "was the basis of the ancient city, and faith alone can be the basis of the modern city."

If we wish to establish this city of the future, this improved and better world—this "new order," as Cardinal Verdier says—we must begin on a foundation of faith. We are confronted with a gigantic task. "We are approaching the greatest of religious epochs," to quote J. de Maistre.

Every man of sufficient courage must be ready to overcome grievous difficulties and contribute his stone towards building this august edifice of the future, on which for the time being work has evidently ceased.

We will bring our stone, in the form of a revised calendar. Calendar reform must be a part of any great program for the improvement of the world we live in. Inaugurated now, and inaugurated in the right spirit, it could become the humble beginning of many great and useful developments.

*EDITOR'S NOTE: Desirable as a change in the beginning of the year may be, calendar reform authorities generally agree that its introduction at the same time as a perpetual civil calendar would cause too great a disturbance, and would therefore fail to achieve popular acceptance.

WEEKDAYS IN THE WORLD CALENDAR

By Elisabeth Achelis

President of The World Calendar Association

ONE of the important features of The World Calendar, frequently overlooked and even misunderstood, is the allotment to each month of 26 weekdays plus Sundays. In ordinary usage, the greater number of these 26 *weekdays* are work-days, but it is not accurate to say that *all* of them are *work-days*. Funk and Wagnalls' dictionary defines the weekday as "any day of the week except Sunday." It is obvious, then, that weekdays may be either holidays or work-days.

The number of work-days in any given week is influenced by business practices and occupational differences, by national customs or local usages, by civil holidays or religious feast-days. Although in certain industries, the 5-day work-week is recognized, yet the majority of people still work five and one-half days in the week—the second half of Saturday being in most instances a recreational period. Many occupations, however, require attention on all of the weekdays and include the performance of duties on holidays as well as on Sundays. In such cases, adjustment is made among the various employees, who enjoy another day of rest within the week.

With each month containing exactly 26 *weekdays plus Sundays* and each quarter being allotted exactly 91 days or 13 weeks or three months, the eminently mathematical structure of The World Calendar is established. What has been carefully insisted upon in The World Calendar is the simplicity, orderliness and exactness of the essential form of the plan itself.

National holidays cut into the industrial working-week and together with local observances of special days make each working-week different in each country and throughout the calendar year. Religious holidays, whether observed nationally or locally, change still further the character of the working-week. Yet all these differences do not alter the 26 weekdays in any given month of The World Calendar.

It may be safely said that there is hardly a weekday in the year which is not a holiday in some country or locality. The regulation and stabilization of national and local holidays is left to each nation. The importance, therefore, of the terminology of *weekday* instead of *work-day* cannot be overemphasized.

A booklet, *Bank and Public Holidays Throughout the World,* issued in

1940 by the Guaranty Trust Company of New York, lists the different holidays in the various countries. Students of the calendar will be interested to note the way in which a few of these nationally observed holidays, listed below, fall on different dates and months, thereby changing the character of the working-week in each country; yet they do not alter the number of 26 *weekdays* of the month.

Argentina	Independence	May 25
Belgium	National Independence	July 21 (observed on Monday)
Brazil	Independence	September 7
Bulgaria	Birthday King Boris III	January 30
Canada	Victoria Day	May 24
Chile	Independence	September 18, 19, 20
China	Dragon Boat Festival	June 10
Denmark	Constitution	June 5
Finland	Independence	December 6
France	National Holiday	July 14 (observed on Monday)
Germany	National Independence	January 30
Great Britain	Bank Holiday	August 5 (first Monday in August)
Greece	St. George	April 23
Hungary	National Holiday	March 15
Iran	Birthday of the Prophet	May 7
Iraq	Birthday, King Faisal II	May 2
Italy	National Holiday	October 28
Japan	Festival Vernal Equinox	March 21
	Festival Autumnal Equinox	September 23
Mexico	Our Lady of Guadalupe	December 12
Netherlands	Queen's Birthday	August 31
Norway	Independence Day	May 17
Paraguay	Constitution Day	November 25
Peru	National Independence	July 29, 30
Portugal	Republic established	October 5
Roumania	National Holiday	May 10
Sweden	Midsummer Day	June 24
Switzerland	Independence Day	August 1
Turkey	National Holidays	August 30 October 28, noon, 29, 30
U.S.S.R.	Constitution Day	December 5
United States	Washington's Birthday	February 22
	Independence Day	July 4
Uruguay	Constitution	July 18
Venezuela	National Holidays	April 19; July 5, 24
Yugoslavia	King's Birthday	September 6

The mathematical World Calendar of 12 months, equal-quarters (the terminology equal-quarters distinguishes it from the 12-month Gregorian calendar now in general use), is notable in other particulars. The seven-day-week sections of the year are firmly established. By beginning each quarter in the year with the first day of the week, Sunday, and by closing

each quarter with the seventh day, Saturday, the week—after many centuries of annual peregrinations—has finally secured a steady and permanent place in the calendar. No longer does it wander. The number seven fits perfectly into this mathematical pattern of Time.

The World Calendar also recognizes 13 complete weeks in each of the four quarter-year divisions of the calendar. For the first time the seemingly irreconcilable number 13 is harmoniously applicable and workable with all the other calendar units. Thirteen is no longer an outcast and taboo in this calendar-plan of Time.

And the stabilization of the new calendar is made possible through the use of one or two "gift" days. These days keep the calendar true to the accurate length of the solar year and with the regular cycle of the seasons. The Year-End Day, placed at the end of every year, is an extra Saturday, a world-holiday; and the quadrennial Leap-Year Day in midsummer, on another extra Saturday, is also a world-holiday. These one or two "gift" holidays complete the mathematical and orderly World Calendar of 12 months and equal-quarters. *These days should never be considered as work-days.* They do not interfere with nor intrude upon the regular 26 weekdays plus Sundays in the 12 months of The World Calendar. These world-holidays may well be used by mankind in his ever increasing desire toward world unity.

HISTORICAL CALENDAR MISCONCEPTIONS

By Charles C. Sutter

FREQUENTLY learned publications, including the *Journal of Calendar Reform,* include articles in which authors perpetuate the popular myth, which has no historical basis, asserting that Augustus borrowed a day from February to increase his birth-month, August. While interesting as a classical illustration of imperial vanity, this legend has no basis in fact.

There also exists a misconception as to just what constituted the Julian reform. We are indebted to Roscoe Lamont (see article, "Augustan Myths," *Journal of Calendar Reform,* Vol. IX, p. 10) for bringing to light the work of Censorinus and Macrobius upon whose, shall we say, eye-witness accounts rests much of our present-day knowledge of the Julian and Augustan changes.

Julius Caesar made a frank and final abandonment of the lunar year. Ten days were added to the pre-Julian year of 355 days to make the civil year 365 days long, and the pontiffs were directed to intercalate one day every four years at the end of February. This was the famous Leap-Year Rule. The additional days were distributed in the calendar as we know them today. The Julian calendar thus in its length of months was the same irregular system we have now.

Caesar's leap-year rule began to be misinterpreted after his death, and it had to be adjusted by his successor, Augustus. He omitted three intercalations between 8 B.C. and 8 A.D., with 8 A.D. the first of modern leap years, so that all leap years are always of a number divisible by four.

The Roman Senate, which had already honored Julius Caesar's memory by calling Quintilis, Julius (July), and not wishing to slight Augustus, named Sextilis, Augustus (August), a month which had the same number of days as July. No day was borrowed from February, for in the old Roman calendar, February already had 28 days.

MAYAN TIME MEASURES

By CLIFFORD N. ANDERSON

Bell Telephone Laboratories

(From *Sky*, June, 1939)

IN the Yucatan peninsula, Guatemala and adjacent territory, there live today several hundred thousand Mayas, descendants of a race which developed the highest civilization in the New World before the coming of the Europeans. Ruins of their long-deserted cities attest to their skill in architecture, sculpture, painting, weaving, ceramics and jewelry. But in one field they even excelled their contemporaries in the Old World—TIME.

They had worked out simple symbols for numbers and gave a position value to the numerals; discovered the concept of zero at least 1000 years before its use in Europe and 500 years before its use by the Hindus; developed a calendar for recording time and derived a value for the tropical year equal in accuracy to our Gregorian calendar but did it 1000 years earlier than the latter's introduction; and devised Venus and moon tables which were at least as accurate as any at the time and eclipses could be predicted with remarkable accuracy.

Information about the Mayas has been gained from the ruins of their cities, Mayan "books" called codices; the writings of the Spanish Con-



Beginning at the left, are Mayan Face Numerals 1, 3, 4, 5, 6, 9, 10. Next in order are the normal forms of the Period Glyphs: baktun, katun, tun, uinal and kin. The last five are the Face Forms of the same Period Glyphs with an introductory glyph preceding. Diagram from Spinden.

quistadores and the Books of Chilam Balam. These last were written by the Mayan Indians during the Spanish colonial period in the Mayan language but with European script. They relate Mayan chronicles and myths.

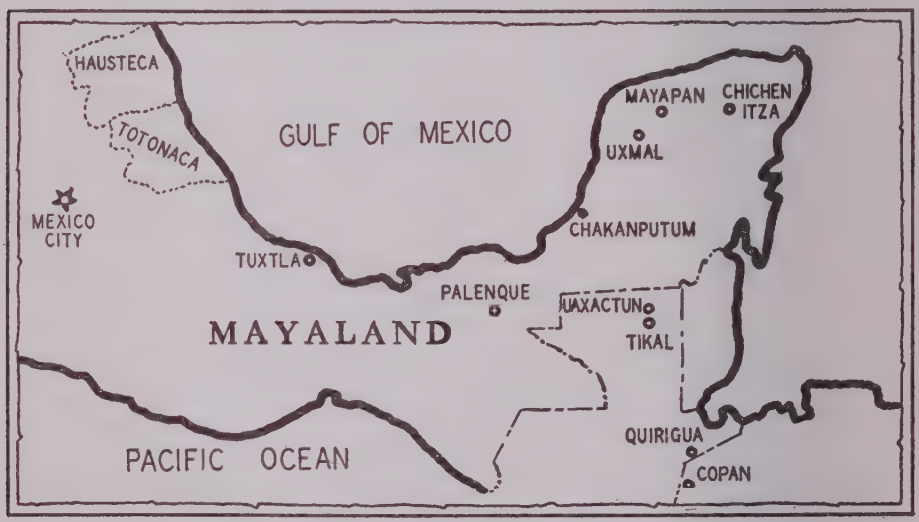
In the Mayan written language, as in Chinese, each character represented a word or idea. About 400 different basic characters with their numerous variants have been found. Most of these deal with astronomy, possibly because most of the remains of their writings are those carved on stone stelae which were principally astronomical records. The present-day knowledge of these hieroglyphics is limited principally to the 20 day-signs, the 19 month-signs, the numerals including the face-signs, signs for the sun, moon, Venus and possibly Mars and Jupiter, possibly the eclipse sign,

several gods and some other pictographic forms. This isn't very encouraging for the historian but exceedingly fortunate for the astronomer.

The earliest recorded Mayan date, 8.6.2.4.17, on a small statuette from San Andres Tuxtla, corresponds to either 98 B.C. or 161 A.D.* Certainly it is true that by the time of Christ, the Mayas had developed a calendar and hieroglyphic writing. It is impossible to say how long before this they rose above a mere existence. The zero of their calendar is before 3000 B.C. but this is probably a mythical date rather than a historical one.

The next known date, 8.14.3.1.12, or 320 A.D., is on the Leyden Plate now in Holland. The next is on stela 9 at Uaxactun (8.14.10.13.15 or about 327 A.D.). Then dates are numerous at such Mayan cities as Tikal, Copan, and Palenque, until they cease altogether about 889 A.D. (10.3.0.0.0).

With the dying out of the culture in these southern cities, the scene shifts to northern Yucatan. Just what caused the exodus from the south



is not known—possibly soil exhaustion—but by 879 A.D. (10.2.9.1.9), Chichen Itza was well along in its development and destined to become the largest city and the religious center of the Mayas.

Fifty years later, Chichen Itza too was abandoned, the population moved westward to Chakanputum where they lived for two centuries. Then the Mayas moved back to Chichen Itza and reoccupied it about 1100 A.D.

Other cities sprang up, among them Uxmal and Mayapan, which, to-

*In January, 1939, a stela with the date 193 years earlier than the Tuxtla statuette was unearthed about 15 miles west of San Andres Tuxtla. See "Discovering the New World's Oldest Dated Work of Man," by Matthew W. Stirling, *The National Geographic Magazine*, August, 1939.

gether with Chichen Itza, formed the League of Mayapan. Peace and general prosperity brought about by the League resulted in a scientific and artistic renaissance. Civil war broke up the League and the ruler of Mayapan with the aid of Toltec-Aztec allies from Mexico conquered the Itzas. The foreign conquerors brought with them the worship of their fair-haired god Quetzalcoatl—the feathered serpent—renamed him Kulkulkan and built new temples and rebuilt the old, all dedicated to the new god.

But the Mayan civilization was nearing its end: October 12, 1492, Columbus discovered a new world. It was 1511 before the Spanish first reached Yucatan. Mexico was conquered by Cortes in 1524 and as late as 1535 there wasn't a Spaniard in Yucatan. Bows and arrows can't compete with bullets, however, and finally in 1542 the city of Merida fell. In a large bonfire in the city of Mani in 1562, de Landa destroyed 5000 idols, 13 large stone altars, 22 small stones, 27 rolls of signs and hieroglyphics on deerskin and 197 vases. "We found among them a great number of books in their letters and because they had nothing but superstitions and lies of the devil, we burned them all, which they felt deeply and gave them pain." Thus were destroyed records of Mayan arithmetic and astronomy.

The Mayas had a vigesimal system with 20 digits for counting as contrasted with our decimal system with 10 digits and whereas we read our numerals from left to right, the Mayas read theirs from top to bottom. To the unaccustomed, it may be a little more cumbersome to think in "twenties" than in "tens" but the difference is small. Their method of representing digits was somewhat simpler than ours as they had but four symbols: an eyelike symbol for zero, dots to represent units, bars to denote fives and a moon symbol for 20. The number 13, for example, would be represented by a row of three dots over two horizontal bars. In addition, the artistic

THE TZOLKIN

Day Names	*Associated Day Number for the 260 Combinations*												
IMIX	1	8	2	9	3	10	4	11	5	12	6	13	7
IK	2	9	3	10	4	11	5	12	6	13	7	1	8
AKBAL	3	10	4	11	5	12	6	13	7	1	8	2	9
KAN	4	11	5	12	6	13	7	1	8	2	9	3	10
CHICCHAN	5	12	6	13	7	1	8	2	9	3	10	4	11
CIMI	6	13	7	1	8	2	9	3	10	4	11	5	12
MANIK	7	1	8	2	9	3	10	4	11	5	12	6	13
LAMAT	8	2	9	3	10	4	11	5	12	6	13	7	1
MULUC	9	3	10	4	11	5	12	6	13	7	1	8	2
OC	10	4	11	5	12	6	13	7	1	8	2	9	3
CHUEN	11	5	12	6	13	7	1	8	2	9	3	10	4
EB	12	6	13	7	1	8	2	9	3	10	4	11	5
BEN	13	7	1	8	2	9	3	10	4	11	5	12	6
IX	1	8	2	9	3	10	4	11	5	12	6	13	7
MEN	2	9	3	10	4	11	5	12	6	13	7	1	8
CIB	3	10	4	11	5	12	6	13	7	1	8	2	9
CABAN	4	11	5	12	6	13	7	1	8	2	9	3	10
EZNAB	5	12	6	13	7	1	8	2	9	3	10	4	11
CAUAC	6	13	7	1	8	2	9	3	10	4	11	5	12
AHAU	7	1	8	2	9	3	10	4	11	5	12	6	13

nature of the Mayas led them to devise a system of 13 types of human heads and then by applying the characteristic jaw of the head for 10 to the heads for 4, 5, 6, 7, 8 and 9 they formed a series of 14, 15, 16, 17, 18 and 19.

In writing numerals, a position value was given to the symbols. For example, when we write 32 we really mean $(3 \times 10) + 2$. Similarly when the Mayas wrote a "three" above a "two" they meant $(3 \times 20) + 2$ or 62.

The Mayas did not have fractions as such. They did, however, delight in combinations in which an integral number of units of one kind would equal an integral number of units of another. For example: *81 moons = 2392 days* gave a value of 29.53086 days for the lunar month compared with the now accepted value of 29.53059 days.

The Mayan calendar was simply a machine in which a wheel moved a cog each day. No attempt was made to gear it to the sun as in the Gregorian, nor to the moon as in the Chinese, Mohammedan and Jewish. It was simply an arbitrary orderly succession of days going on and on. Its accuracy was that of the priest in charge. That they did make mistakes is attested to by the occasional conferences between the priest-astronomers to determine what day it was.

The Mayas had two ways of indicating any particular day. One was a number which indicated how many years, months and days had passed since some arbitrary starting point. This has been called the "Long Count" and is illustrated by the historical dates given earlier in this article. The other method involved a combination of day and month names and two sets of numbers which gave the position of the day in a period of 52 years. This has been called the "Calendar Round." "Monday the third" means to us a specific day in a 7- or 8-month period; "Monday, January third" means a specific date in a 6- or 7-year period. The Mayan system was similar except that their period was 52 years. A complete date record would be the Long Count date with the supplementary identification of the day in the Calendar Round such as 10.2.0.0.0. 3 Ahau 3 Chen. This has been called an Initial Series date as the series was introduced by a special glyph called the Initial Series Glyph.

The Long Count consisted of a series of numbers, one above the other with the longest period on top. The five units usually used in a Long Count series and their equivalents are:

Baktun (approx. 400 years) = 20 Katuns
Katun (approx. 20 years) = 20 Tuns
Tun (approx. 1 year) = 18 Uinals
Uinal = 20 Kins (day)

This was sufficient for about 8000 years. For longer periods they used:

Pictun (approx. 8,000 years) = 20 Baktuns
Cabaltun (approx. 160,000 years) = 20 Pictuns

which sufficed for over 3,000,000 years. In Tikal there is a record of an

8-period figure and eight periods extend the system to 65,000,000 years. No people had before thought in terms of such periods of time. But for the Long Count, five periods sufficed: Baktun, Katun, Tun, Uinal and Kin.

The 52-year Calendar Round was the combination of a 260-day period called a *Tzolkin* and a 365-day period for which we do not know the Mayan name, but which has been called either the "haab" or the "vague year." The pseudo-year was comprised of 18 months of 20 days and one 5-day month—the unlucky one. Each month had a name* and the days of the month were numbered starting with 0 and ending with 19 as the Mayas counted in elapsed time. The 20 day names repeated themselves continuously in the same way that our days do and were combined with a repeating series of the numbers 1 to 13 so that at the end of 260 days (the *Tzolkin*) the combination name and numbers repeated themselves. The net result is that a day name and a day number identify a particular day in a 260-day period and by also giving the day a position number in the month, a particular day in a 52-year period is indicated.

Several modifications of the Initial Series dates developed. The method requires eight glyphs to express a date, which is costly of space and effort, particularly with several dates on one monument. So after about 900 A.D., the dates were no longer written in the entire series. The length of the lunar month was known; the tropical year was known; the Venus cycle had been determined; everything was settled; they knew all the answers; there was no more need for recording a lot of data to be correlated with the past. So the Period-Ending system was resorted to, which gave merely the ending dates of the Katuns. This, after all, wasn't so bad; such a period-ending would not recur for 18,980 Katuns or 374,153 years. Still later, only Tun endings appear, which are accurate to 18,707 years, but when the month parts are omitted, as was usually the case, the results are accurate only within a 260-year period. The analogy to our present calendar would be to write January 1, '39. A thousand years hence, who would know what century was meant?

If the Mayas had only retained the Long-Count system until the arrival of the Spaniards, there would have been no question as to the correlation of the Mayan and the Gregorian calendars. All authorities agree that Merida was founded in Katun 11 Ahau, but since such a date recurs every 260 years there is no way of knowing which Katun is meant without the month part. The choice of correlations seems to have narrowed down to two: one originally proposed by Goodman and revived by Martinez and Thompson gives the zero year of the calendar as 3,113** B.C., whereas Spinden and Morley favor 3,373 B.C.

In a tropical region such as that inhabited by the Mayas, with a generally uniform climate throughout the year, the two most obvious divisions of time are the day and the lunar month. Naturally lunar observations were an important item in the life of the Mayan astronomer and most of the known complete dates refer to the moon. A supplementary series of glyphs indicate the significance of the information. "Glyphs A and B" indicate whether the current moon is a 30-day or a 29-day moon; "Glyph C" indicates the number of moons after an ecliptic conjunction; "Glyphs D and E" give the age of the moon in days from the last new moon, "D" for days up to 19 and "E" for 20 days and over.

The Mayas did not deal in fractions so the problem was to find an integral number

*Pop, Uo, Zip, Zota, Tzec, Xul, Yaxkin, Mol, Chen, Yax, Zac, Ceh, Mac, Kankin, Muan, Pax, Kayab, Cumhu, and Uayeb (5 days).

**According to Teeple, "The only correlation for which there is no contrary astronomical data." All dates in this article are therefore based upon this.

of moons which correspond exactly to an integral number of days. At Palenque 81 moons were taken equal to 2,392 days, which gave a value for the lunar month of 29.53086 days. The corresponding figures at Copan were 149 moons equal to 4,400 days, giving a lunar month equal to 29.53020 days. Compared with our accepted value of 29.53059 days, the error amounts to only about a day in 300 years.

There was little need to correct the Mayan calendar in order that a given date, such as 4 Ahau 8 Cumhu (the first day of their Long Count series), would always occupy the same position in the solar year. Consequently, a given date would gradually retrogress through the solar year until after 1,507 years it would be back at the starting point. The Mayan priest-astronomer was, however, interested in determining on what day in his calendar certain historical dates should be celebrated and so, although he didn't correct the calendar, he wanted to know what that correction was.

The relation of 19 years (approximately) being equivalent to 235 synodic months (known to us as the Metonic Cycle) was known to the Mayas. With this relation and assuming 149 synodic months equal to 4,400 days, the Copan astronomers arrived at a figure of 365.2420 days for the tropical year which compares as favorably with the now accepted value of 365.2422 days as the Gregorian value of 365.2425 days. However, the Mayan figure was arrived at nearly 1,000 years earlier. The extreme accuracy was partly due to the balancing out of two errors in the equations as the values for both the 19-year period and the lunar month were slightly low. At Palenque the method was apparently different, possibly adding 35 days to 144 vague years, giving a value of 365.2430 days.

Our information concerning the Mayan knowledge of eclipses is obtained almost wholly from the Dresden Codex. Here is shown an arrangement of 405 consecutive moons covering nearly 33 years arranged in 69 groups of five or six moons each. Every one of the 69 groups ends on a day when an eclipse could occur somewhere on the earth and it is assumed that the table is one of eclipse syzygies. Very little has been identified in the inscriptions but it is believed that the Mayas were probably familiar with the general method of eclipse occurrence.

The Dresden Codex gives Venus tables describing the Venus synodic cycle as 236 days as a morning star, 90 days in disappearance (superior conjunction), 250 days as an evening star and eight days in disappearance (inferior conjunction), giving a total of 584 days. Actually the synodic periods run in a series of five: 580, 587, 583, 583 and 587, averaging 583.92 days.

The Mayas were well aware of the approximate relation of five Venus years equaling eight solar years (2,720 days) but further than that they used 65 synodic Venus revolutions to equal two Calendar Rounds (each 52 years), or, 37,960 days, with occasional corrections. A 4-day correction was made after each of four groups of 57 Venus revolutions and then an 8-day correction was made after a 67-revolution period, making a 24-day correction in about 301 years. This is equivalent to an amazingly accurate synodic period for Venus of 583.9201 days.

Although their Venus tables are very accurate and the Mayas were in general far advanced in observational astronomy, it is doubtful if they had any insight as to the mechanism or ever suspected a Copernican system.

Most astonishing, though, is the accuracy of their observations, the interrelation of their various calendar elements, the level of their mathematical achievement and the extent of their astronomical knowledge.

THE WORLD CALENDAR SPEAKS

By Robert P. Shaw

Director, New York Museum of Science and Industry

AS The World Calendar exhibit enters upon its second year in the New York Museum of Science and Industry in Rockefeller Center, it is being equipped to tell its own story. Before the end of March, this colorful and animated display, which presents the historical background of our own calendar and explains the proposed World Calendar, will in literal truth be speaking for itself and arguing its own case by means of a sound device installed in its mechanism.

It seemed only fitting that an idea as advanced and progressive as that of The World Calendar should be given the most up-to-the-minute setting modern exhibition techniques could devise. For this reason, and also because of the lively effect which the addition of sound lends to any demonstration, it was decided to give the exhibit a voice of its own.

This has been done in the following manner. At right and left sides of the large frame in which the display is built, push buttons and telephone receivers have been installed, one push button and three receivers on each side. When the Museum visitor pushes the button, he starts a concealed phonograph which, as he listens through the receiver, offers him a 5-minute running commentary on the story presented by the continuously changing pictures and transparencies of the display itself. Thus, as the visitor watches the panorama of the calendar unfold before his eyes, he hears at the same time an explanation of just how his own life is affected by the uncertainties of our present arrangement of days, weeks, months and years, and the benefits to be gained by the proposed uniform and coordinated arrangement. When the explanation has been given once, the hidden voice stops, but any visitor who wishes to hear it again has only to press the button a second time.

Following is the message which comes to the visitor's ear as intimately and informally as one person would speak to another:

"Let me give you a brief story of that little pad of monthly dates on your desk, similar to the pads now lying on millions of other desks all over the civilized world. Do you know that we could be freed forever from the tyranny of those irregular monthly groups of numbers; literally over night? Our calendar pad would remain on our desk, a constant reminder of our daily tasks, but it would be unchanged from year to year.

"It can be done! A great international organization has assembled the information of centuries of astronomical research, has taken account of the rigorous demands of great business organizations, has given kindly consideration to religious traditions and to patriotic devotion to national

holidays in formulating a scheme for a yearly calendar that will wipe out at once those numberless difficulties with days of the week and dates of the month that are one of the minor ills of human life. This alone would be more than enough to recommend it to our attention; but it has far weightier reasons in its favor. Indeed, these wider implications are suggested by the name that has been adopted for this new scheme of time-measurement, frankly, avowedly intended as one step toward the millennium. That name is 'The World Calendar.'

"It would be quite impossible here to discuss in detail even *one* of the astronomical facts that have befuddled all calendar-makers since the time of the Chaldeans thousands of years ago. Central Asia, Egypt, and Europe have in turn been thrown from one confusion into another by the attempts of their astronomers to fit the day, the week, the month and the season into the cycle that we call The Year. This we now know cannot be done. But we do now know the length of the year so exactly that we can make an arrangement of days so nice in adjustment that only once in about 3,300 years will we have to drop one day from our calendar to keep our seasons and our dates in proper step.

"The one difficulty that remains before we can properly use this exact knowledge is the present irregular arrangement of the dates within our months. The World Calendar removes that difficulty by a simplifying stroke that charms all who give it a few moments' thought. This simplifying stroke lies in abandoning *The Month* as the *basic* unit in the year and in substituting *The Quarter*—four of them, of course, for the year. But—and here is the master-stroke—all quarters are of the same length, 91 days, or 13 weeks. Then, within each quarter lie the three months of 31, 30 and 30 days respectively. That perfect symmetry, however, gives us only 364 days and we must have 365! To meet that necessity, one extra day, Year-End Day, an extra Saturday, follows December 30 every year; and, every four years (except century years not divisible by 400) there comes a day following June 30, also an extra Saturday, to take the place of our misbegotten February 29 as Leap-Year Day. Both Year-End Day and Leap-Year Day are to be world holidays devoted to world peace.

"When this calendar is adopted, as it is hoped it will be by 1945, all present calendar pads, diaries and engagement books, which now change every year, will be as permanent as our clock. A single card becomes a perpetual calendar to serve us through all the days of our years. Each quarter begins on Sunday, ends on Saturday, has three months, each with 26 weekdays. Every anniversary, every holiday, falls on the same day of the week year after year. Slight shifts will give us many long week-end holidays such as the popular Labor Day now gives us.

"Time does not allow us to enumerate its other advantages. Truly, with its adoption our unbalanced, irregular calendar would be reformed

to join those other balanced quarters of the earth, with its 'four corners,' its winds from the four directions, North, East, West and South. It would join the symmetry of the hour with its four quarters. Indeed our Year would stand like that Holy City of *Revelation* four-square to the world, with its 12 gates, three in each direction. Those gates are never to be closed, the nations are to walk in honor within this four-square city, and therein stands The Tree of Life bearing 12 manner of fruits and yielding her fruit every month. Moreover, the leaves of that Tree will be 'for the healing of the nations.' This amazing similarity with The World Calendar suggests the idea that its adoption may be the fulfillment of a Biblical prophecy and that its two *world holidays* may then be said to symbolize those leaves of The Tree of Life that are 'for the healing of the nations.' "

VAGARIES OF EASTER

THE early observance of Easter this year calls attention anew to the annual wanderings of this important Christian feast-day. Easter Sunday came on March 24, within two days of the earliest possible date.

It was also interesting to observe, this year, the celebration of St. Patrick's Day on Palm Sunday, for it is a rare occurrence for the shamrock to meet the palm. Not since 1799 has Palm Sunday fallen on March 17, the day of St. Patrick, the saint who used the shamrock to illustrate the mystery of the Trinity. It may never occur again; for under the perpetual World Calendar, which can be introduced in 1945, it has been suggested that religious authorities could stabilize Easter on April 8; and Palm Sunday would then occur on April 1.

The need for the stabilization of Easter is emphasized by a glance at the dates on which it will occur in coming years. Next year Easter falls on April 13, the following year on April 5, and in 1943 it will be observed on the latest possible date, April 25. In 1944 it strikes the average between its two extreme dates, April 9. In 1945 it will be celebrated on April 1, and the following year on April 21. It is anticipated that in 1945, Easter will be stabilized on April 8.

It lies within the jurisdiction of the leaders of the great Christian Churches to make it possible for Christians throughout the world to observe Easter on one and the same Sunday which can be stabilized in the perpetual World Calendar, adopted by the nations for the benefit of mankind.

CONTENDERS FOR TIME'S HONORS

By FRED WINSLOW ADAMS

Professor in Boston University School of Theology

REPRESENTATIVES of 41 nations met at Geneva on November 15, 1920, to set up the League of Nations. This was in part made possible because these representatives, in spite of differences in racial heritage, language, forms of government, and economic conditions, could sign on the same dotted line, for they shared a common calendar.

To have given civilization such a bond of unity for marking time was an achievement that goes without celebration. In case such celebrations were to be held, there would be many contenders for honors, for many men made possible the calendar we today take for granted. And yet, in some mysterious manner, one name seems to stand out above all others. I am purposely leaving the reader to guess for himself that one outstanding name.

When Julius Caesar returned from Egypt in B. C. 46, he brought back to the Roman Empire the Egyptian calendar. The Egyptians had long studied the habits of the shadows which stole around the bases of the pyramids eluding the tropical sun. They had from such measurements determined the length of the solar year to be 365.25 days. The Babylonians had made the same discovery even earlier, but were too conservative to put their finding into practice. Egypt, however, went ahead. She divided her year into 12 months of 30 days each. This reckoning gave five extra days, six in leap year, unaccounted for. The extra days were added as holy days, each named after an Egyptian god.

Julius Caesar abolished the lunar year. With the advice of the Egyptian astronomer Sosigenes, he accepted the solar year of 365.25 days and the civil year of 365 days, as he had found them in Egypt. But he did not approve carrying over five extra holy days or holidays. Moreover there were but 355 days in the Roman year in current use. This left 10 days for him to account for. He did so by adding two days each to the months of January, Sextilis, and December, and one day each to April, June, September, and November. The other five months remained as they were. And all the months, as arranged by Julius Caesar, have remained the same down to the present day.* Julius still had one extra day which would come every four years. This was arranged for by adding a leap-year day to February, giving it 29 days every fourth year.

In honor of this reform of the calendar, the month, Quintilis, in which

*EDITOR'S NOTE: This fact is prominently mentioned in the exhibit, "The Story of the Calendar," sponsored by The World Calendar Association, on view the entire year at the New York Museum of Science and Industry in Rockefeller Center. See also *Journal of Calendar Reform*, First Quarter, 1939, page 10, and page 16 of this issue.

Caesar was born, was changed to Julius (July) on motion of the Consul, Marcus Antonius, son of Marcus. From that day to this the month of July has been the month of Julius Caesar. Of all the triumphs of this great Caesar, whom Shakespeare called "the foremost man of all the world," the greatest was that of the Julian calendar.

It was once said that all roads lead to Rome. It was eventually to be said that the civil calendars of all European countries lead to the Julian calendar, itself reckoning time from the building of the city of Rome.

Augustus Caesar, the first Roman Emperor, further reformed the calendar. There is no validation of the myth that he added a day to August, giving it 31 days. But Augustus' vanity may have been peaked in having Julius Caesar's birth immortalized in one of the months of the year. He had succeeded Julius Caesar as Pontifex Maximus, as well as ruler. His arms too had brought triumphs to Rome as had the first Caesar. He might have exclaimed for himself, somewhat as Cassius exclaimed for Brutus, "Pronounce the two names together, Augustus and Julius; why, Augustus sounds as well as Julius!" At any rate the Roman Senate passed a decree renaming the month of Sextilis, Augustus (August), and it has remained so ever since. September and not August was his real birth-month, but it was in the month of Sextilis that he was first made Consul and thrice entered Rome in triumph, so there he stands side by side with Julius, whom he succeeded in office. The contagion of naming months for emperors which followed threatened to exhaust the available months. Nero, Claudius, Germanicus, and others had their "honorific months." But these were mere spasms. Only July and August survived the ravages of time. Augustus, however, did make a notable reform in the calendar. The College of Pontiffs failed to carry out Julius Caesar's directions for leaping every fourth year. They authorized the practice of leaping every third year. Augustus discovered in the year B. C. 8 that, because of this mistake, the year actually began three days late. To rectify the miscalculation he suspended the next three intercalations. Then he restored the Julian directions and ordered that a leap year should fall every fourth year. That made A. D. 8 the first of our modern leap years, and shows why all leap years are divisible by four. For this achievement the calendar has sometimes been called Augustan.

Constantine the Great, the first Christian Emperor, also interested himself in calendar reform. He is said to have Christianized the calendar. His contributions centered in "the week." The Egyptians and Romans had no weeks. The Greeks had divided the lunar month into a 10-day week. The Jews, widely dispersed throughout the Roman Empire, observed their Mosaic 7-day week, with the last or seventh day sacred to worship and rest. The Christians followed the Jewish 7-day week, but substituted for the Sabbath or seventh day, Sunday, the first day, on which they celebrated the

Resurrection of the Lord by a liturgical Lord's Supper. Constantine in A. D. 321 immersed the civil year in his new faith by proclaiming Sunday a day of rest and religious observance. Eventually he made Christianity a state religion. In A. D. 325 at Nicaea the 7-day week was sanctioned.

While, as already stated, the Romans had no calendar week, the interval between markets made what has been called an 8-day "market" week. In fact, to facilitate the change from this practice to the new 7-day week, Constantine had the weeks exhibited in parallel, painted in letters of gold. Hence the use of the ecclesiastical word "golden."* This change may have been further aided by the astrologer's planetary week of seven days, allotted to the sun and moon and five planets of Mercury, Venus, Mars, Jupiter, and Saturn. This was part of an international system of astrology by which all time was apportioned to the sway of the heavenly bodies. In any case, the week still carries the planetary names, beginning with Sun Day or Sunday. To Constantine is assigned the honor of establishing the 7-day week which still obtains in Western civilization, and of having put the calendar on a firmer foundation than that of the Empire.

Rome fell in the ending of the Fifth Century. The Julian-Augustan-Constantine calendar might have fallen with the Empire had it not had the Church mothering it. But it now faced extinction from another source. Mohammed arose as a new religious leader in the Sixth Century. He eventually sallied forth on a world conquest no less real than that of Alexander or Julius Caesar. He gave his followers a Moslem calendar built on the lunar month, instead of the solar year which had been the basis of the Egyptian calendar, as it had of the Julian. The Moslem year had 12 months, renamed, and of alternating 30 and 29 days each. This calendar was accepted in a rapidly increasing Islamic world, which challenged Christianity. The discrepancy of the Moslem year with the solar year was about 11½ days. That meant that the months eventually failed to synchronize with the spring and autumn equinoxes, the summer and winter solstices, and with time as reckoned in other lands. "What of it? Can science stand in the face of Allah? It is of Allah, and so unchangeable and eternal!" And thus the Moslem calendar continued reckoning time from the Hegira, or flight of Mohammed from Mecca to Medina in A. D. 622, with its loss of about 11½ days each year. In A. D. 1927, Turkey abandoned the sacred calendar of Mohammed for solar time measurement.

Pope Gregory XIII is another distinctive contender for calendar honors. It was he who called for a calendar reform to cover a discrepancy, which astronomers pointed out to him, between the Julian year and the actual solar year. The Julian mistake meant that there had been an accumulation of 11 minutes and 14 seconds, every year. Such a fraction looks like a trifle. But in a thousand years it takes on significance. By 1582 the calen-

*Wilson, P. W., *The Romance of the Calendar*, p. 238.

dar had accumulated 10 extra days. That year Pope Gregory ordered that 10 days he dropped by reckoning October 5 as October 15. By this regulation, the vernal equinox, which then happened on the 11th of March, was restored to the 21st, its correct date. He instituted the present rule for leap year. That was destined to make 1582 forever famous in calendar history. And thus it has come about that we no longer speak of our calendar as the Julian, but rather as the Gregorian. By this act of reform the hand of mighty Caesar had given way to the hand of a mightier Church. In this Gregorian honor, the name of Constantine the Great must not be forgotten. It was he who made Christianity a state religion when Rome was still a World Empire, and so left a guardian for the calendar Rome had established.

In Spain, Portugal, and a part of Italy, the reformed or Gregorian calendar was adopted at once. In France, the change took place at the end of the year, December 10 being moved forward to December 20, and in the low countries, December 15 became December 25. The Protestant element resisted this change to a considerable extent. To them, the change seemed like a surrender to the Pope. Greek Orthodox countries resisted even to the present century. So they continued the rule of the Caesars. Paradoxical it was, for they chose to follow pagan Caesar rather than Christian Gregory. But such protest was not a universal Protestant attitude. The adoption in Switzerland began in 1582; it was gradual and was not completed until 1812. But England held back for 170 years. By 1752 the Julian calendar was not 10 but 11 days out of tune with the sun in the heavens. The British Parliament made the grade then, however, and dropped 11 days by reckoning September 3 as September 14.

But the two Caesars, Julius and Augustus, Constantine, Mohammed, and Gregory XIII were not the only eminent contenders for calendar honors. Another and quite important change besides those mentioned had taken place almost silently and unnoticed. The name of a Jew had appeared in the list of the contenders for the calendar. Stranger still this was by no act of his own. Unlettered and provincial, in the general acceptance of those words, the name of this Galilean carpenter had not only challenged the name of the great Caesar, but in the end was destined to supersede it. The Jewish calendar in the days of the Caesars reckoned time from a seemingly sure foundation, that of the creation of the world. But since science has pushed back the creation of our world to millions of years, and even the existence of civilization to thousands of years before the date recorded by the Jews for the creation of man, the term "from the creation of the world" becomes an exceedingly unstable and untenable point from which to base the reckoning of time. The Julian calendar reckoned its years from A. U. C., "the building of the city," that is, the founding of Rome on the Tiber. There were also sub-reckonings as "In the year of the reign" of an

emperor, king, or pope, or "in the year of the consulate." Time was also counted from the Olympiads and from the Indiction (tax periods). But emperors perished. Consulates were abolished. Olympiads and Indiction periods failed to carry importance. Rome fell. When civilization emerged after 500 years of so-called "Dark Ages," the calendar of time no longer carried the famous A. U. C. but the new A. D. No longer was time being reckoned from the building of the city, but from the birth of a Galilean Jew. Time before His birth was being counted as B. C.—"Before Christ," and after His birth as A. D.—"In the Year of Our Lord." And so it is today. My Hebrew Bible bears the date of 5677, but also the date 1917, and these dates stand side by side, 5677—1917, from the creation of the world and from the birth of Christ!

How did it happen that a crucified Galilean, who never in His life wrote a line, yet in His death wrote His name across the calendar of time? How does it happen that now, nearly 2,000 years after His death, the civilized world, irrespective of race, religion, or nationality dates all official documents from the year of His birth?

Research has not fully uncovered the answer. It certainly did not come about by fiat of any emperor or pope. Constantine might have ordained that time be reckoned from the birth of Christ; instead he instituted the Indiction periods. The legend runs: "In the year of the Indiction of the Emperor Constantine." In A. D. 37, the Emperor Justinian issued a decree directing that all public documents should be dated by the year of the emperor, the name of the consul, and the Indiction then current. Only four years after that the last consul was elected. The office and the man alike became shadows. The Moslem almanac drawn up by Calif Omar, A. D. 640, counting time from the Hegira A. D. 622, has prevailed among the followers of Mohammed for over 1200 years. In 1927 the Turkey of Mustapha Kemal Pasha swept the Moslem almanac into the discard and adopted the Gregorian calendar, basing time from the birth of Christ. Just how the name of the Nazarene came to dominate the calendar of the world's civilization may never be discovered. But at least we know it was by a process of natural evolution. There are certain signs along the way. They had a beginning by the Third Century.

In A. D. 222 Hippolytus, schismatic Bishop of Rome, historian, liturgist, saint, and martyr, began to compute Easter tables. Excavations in Rome in A. D. 1551 brought to light a statue of Hippolytus which is preserved in the Lateran Museum in Rome. On one side is inscribed an Easter Canon he computed, and on the other is a partial list of his works. It was Hippolytus who argued that December 25 was the actual date of Christ's birth, and who has left the fullest early account we possess of the Eucharist. He emblazoned the name of Christ on the whole of the Third Century.

In A. D. 312 Constantine was converted to Christianity. He stamped the

cross—("Hoc vinces," by this conquer)—on the institutions and literature of his time. Further, as already noted, he placed the 7-day week with its Christian Sunday as well as Jewish Sabbath in the remodeled Julian year.

In A. D. 532 Dionysius Exiguus, a learned monk and astronomer, familiarly known as "Denys the Little," began in his Easter tables to count "ab incarnatione domini." It matters not that both Hippolytus and Denys the Little made many errors in their computations; it is significant that the latter began counting "from the incarnation of Our Lord," and that the former insisted on a definite date for the birth and incarnation.

In A. D. 748 we have the first known instance of dating according to the Christian Era. In 879 King Charles III of Germany was the first to add "in the year of Our Lord" to his reign. In 1219 we have the earliest known use of the actual phrase "Anno Domini." Three hundred years later "The Year of Our Lord" was rapidly becoming a universal designation for the calendar. Not the creation of the world, not the flight from Mecca, not the founding of the city of Rome, not the throne of Augustus, not even the sign to Constantine in the heavens, but the birth of a Babe in a Bethlehem manger had conquered the calendar of time!

Other contenders for calendar honors were yet to come. The Gregorian calendar, wide as had become its influence, was not yet to be taken for granted. A vital protest was to be made against everything Christianity stood for in a calendar based on human reason.

This new calendar had its birth in the French Revolution. On October 5, 1793, the almanac of reason was formulated as the death knell to Church and State and aristocracy. It replaced the Gregorian calendar. It put on the guillotine "The Year of Our Lord," and raised to a throne "In the Year of the Republic." The new almanac was antedated to September 22, 1792, so that the first day of the new Republic in France became New Year's Day. The year was based on 365 days, divided into 12 months of 30 days each, and the month into 10-day weeks, the tenth being a rest day.

The five left over days which Egypt had named for her deities were given in honor of Revolutionary leaders, and devoted to Virtue, Genius, Labor, Opinion, and Reward. Leap-Year Day was designated the Festival of the Revolution. The making of the new calendar was assigned to Charles Gilbert Romme, President of the Committee on Public Instruction, who was aided by the mathematicians, Gaspard Monge and Joseph Louis Lagrange, and the poet Fabre d'Eglantine. The latter renamed the 12 months for seasonal events, as January, "Nivose," snowmonth, February, "Pluviose," rainy-month, and so on to December, the freezing-month. This calendar of protest, which the new Republic hoped would sweep the world, lasted only 13 years, when the Gregorian calendar was reinstated by Napoleon in 1806. Napoleon's act was significant. His sword failed to con-

quer the world, but the Gregorian calendar he reinstated for France was destined to make the conquest which for his empire was a forlorn hope.

Japan adopted the Gregorian calendar in 1873, and the Republic of China in 1912. The Russian Revolutionists hated the Church and its priests no less than did the French Revolutionists. Yet one of the first acts of the Soviet Republic in the terrible year of 1918 was to adopt the Gregorian calendar. The Balkan States and Greece, where the Greek Orthodox Church holds sway and which "has no dealings" with the Pope of Rome, were among the last to change their Julian calendars to the Gregorian. The change was effected in 1916 and 1923.

But France had yet other contributors to calendar reform. Pierre Simon Laplace (1749-1827) must not be overlooked as a calendar contender. Laplace, greatest of French astronomers, attempted to do by "science" what the French Republic had failed to do by "reason." Disdaining the linking of chronology with trivial events and vanishing names of earthly history, he proposed hitching the calendar of time to the stars in the heavens. He pointed out that the major axis of the earth's orbit coincided with the line of the equinoxes some 4,000 years before Christ. In A. D. 1250 they were at right angles to each other. Here, he argued, was a majestic inviolable event to which all human calendars should be adjusted —that moment at which the line of the equinoxes is at right angles to the axis of the earth's orbit. But in spite of the fact that Laplace made great contributions to astronomy, and that he became a senator and chancellor, was made a marquis, and was elected to the French Academy, he never succeeded in getting favorable consideration for his proposed calendar adjustment.

Yet the Gregorian calendar, thoroughly intrenched as it is, as the universal clock of Time, needs reformation as much as did the Julian calendar in 1582, though not on similar lines. The success in securing universal usage for the Gregorian calendar has been because of its accuracy and its competency. But it does need further simplification to meet the needs of our complex civilization. This need is seen especially in a better uniformity of the days in the month and in a fixed date for Easter.

In 1834 Rome had another contender. An Italian priest, Marco Mastrofini, published a book at Rome entitled *Amplissimi frutti da raccogliersi sul calendario gregoriano perpetuo,* in which he proposed the following: a year of 364 days, beginning on Sunday, January 1, and ending with a 365th, extra-calendrical day, to be called, if the Church so decided, *feria octava.* In leap years the other extra day would be placed either after February, as in the Gregorian calendar, or after the *feria octava;* and this day would be called simply the *intercalary day.* Easter by this arrangement was automatically limited to five Sundays of definite date—on one of which it might eventually be fixed permanently. The only detail in which

Mastrofini did not anticipate *The World Calendar* was in regularizing the length of the months and making the quarters equal. Mastrofini originated the basic idea of all modern reform, the "stabilizing" day.

Two contenders for such reform have seized the imagination of our day.

In 1849 the brilliant French philosopher, Auguste Comte, produced a calendar which was a most valuable contribution to calendar reform. It has been called, from the name given to his philosophy based on the ideal of symmetry, "Positivist." But it is better known, from its distinction of adding an extra month, as the "13-month calendar." Comte, unhampered by tradition, took a 364-day year divided into 13 months of 28 days each. This left an additional day which he called "Year Day," and made a sort of "All Souls Day" of it by consecrating it to "All The Dead." His Leap Day he consecrated to "Eminent Women." The months he renamed for protagonists of world history from Moses, Aristotle, St. Paul, and Shakespeare to Descartes and Bichat. To the weeks he gave 52 names of others he considered nearly as or equally great, including Buddha, Socrates, Plato, St. Augustine, Galileo, and Newton. His "Positivist Year" looks like a calendar of secular saints. It had effective promotion in the United States through the munificence of George Eastman of Rochester.

The other and final contender, to be mentioned in this article, is a woman, who has been happily christened by one organization, "The Calendar Lady." England's Elizabeth was a 16th Century woman whose rare diplomacy steered her country through treacherous shoals to a victorious haven. Achilles was dubbed "the bravest of the Greeks." It will require both diplomacy and courage to reform the thoroughly entrenched Gregorian calendar. Elisabeth Achelis, President of The World Calendar Association, and promoter of The World Calendar equal-quarter plan, has shown herself possessed of both these rare qualities. For a decade she has been going from court to court (as once went Columbus with his maps and charts) laying the ground for universal adoption of a permanent, unchanging calendar.

It is significant that calendar reform has been taken up by a woman and utterly fitting that it should be an American woman. American women have been leaders in reform and educational movements from Anne Hutchinson, "the Woman Unafraid," of colonial pioneer days and her successors; Lucretia Mott, abolitionist, feminist; Sophia Smith, philanthropist, patron of education; and Mary Lyon, pioneer in the education of women; to that remarkable group of 19th Century women, including Lucy Stone, feminist leader; Susan B. Anthony, woman's suffrage leader, who changed the thought of America about women; Clara Barton of Red Cross fame; Louisa May Alcott, daughter of the famous educator, Bronson Alcott, some of whose educational reform ideas breathe in Louisa May's *Little Women, Little Men, Jo's Children,* and whose face adorns the new literary series

five-cent stamp; and Frances E. Willard, first woman college president in all history, who permeated reform with educational methods, and whose face adorns the new educational series five-cent stamp. Jane Addams, whose face also is on the ten-cent stamp in the new scientific series, and many other later educational and reform leaders will instantly come to mind as belonging in this list. Elisabeth Achelis has earned a place in any such grouping. Already she has elicited the support of ecclesiastics, statesmen, philosophers, scientists, litterateurs, laborites, business men and editors in her reform.

Miss Achelis makes no claim to having originated a new calendar. Hers has been the work of editor and promoter of the best plan that has yet been devised in reform of the present Gregorian system.

As the *Journal of Calendar Reform* is the official organ of The World Calendar Association, it would be gratuitous to do more than summarize the contribution of this "Lady of the Calendar."

The World Calendar like the "Positivist Calendar" is built on a 364-day year, but unlike it retains 12 months instead of using 13. Like the "Positivist Calendar," all years can be made to start on Sunday and end on Saturday, and a particular day of the month will always fall on the same day of the week; but unlike it, The World Calendar has the advantage of four equal quarters of 91 days each. The World Calendar changes are far fewer and less disturbing than those demanded by the "Positivist Calendar."

The World Calendar as compared with the Gregorian is just as accurate, much simpler, and more competent for business purposes. It equalizes the unequal quarters and the weekdays of the month of the Gregorian calendar. The unbalanced, unstable, and irregular arrangements of the Gregorian give way to the balanced structure, perpetual form, and harmonious arrangement of The World Calendar, and that without cataclysmic disturbance. The World Calendar is a consummation of the best thought of the 20th Century. It is a gleaning of the fruitage of calendar making of previous civilizations. What science has been doing in recreating the world, The World Calendar is doing in harmonizing time to a new step, not only for our day, but for long days to come. It takes the Gregorian calendar out of the horse and buggy age and recreates it for an age of the storage-batteries, airships and international good-will. International organizations in 31 different countries are agitating for this reform. The World Calendar appeals to Hebrew, Catholic, Orthodox and Protestant. The League of Nations has it under favorable consideration. Each new sunrise brings new pressure and new hope for its soon adoption as the next great step for an advancing civilization.

THE CAMERA AND THE CALENDAR

By Sophie Delar

Official Photographer, Rockfeller Center

THERE is a definite kinship between the camera and the calendar. The shortening and lengthening of the rays of the sun, accompanying the seasons, are only one of the bonds that link them together. Modern astronomy would be all but helpless without the camera to gaze steadily and unimaginatively through the telescope at the heavens and then record what it has seen for the scientist's closer study. And without astronomy, there would be no record of the course of the earth around the sun upon which the calendar is based.

Taking a photograph by natural light during June or July is different than December. The sun has marched south; its rays are longer, hence less bright. The camera stops must be adjusted; the shutter fixed to open and close more slowly, the aperture widened to admit more light. All time is measured by light, and without light there can be no photography.

In spring, during the months of March and April, the land is filled with young men and women looking forward to commencement day, to their graduations. To commemorate the event, the schools and colleges issue the traditional yearbook, adorned with individual pictures of those who receive diplomas as well as photos of clubs and athletic teams. This calls for a camera—for hundreds of cameras. Studios spring up on the campuses of the country and processions of cap and gown wearers file before the lens. Thousands travel to New York and other cities during the Easter vacation, to enjoy the holiday, but principally to have a look at the "birdie."

In spring, too, some of the society buds make their debuts. And what is a debutante without a photo of her ravishing self? So to the studios they troop to be pictured in all their flowers and finery. May and early June also bring out the rash of pardonable vanity in the lovelorn—the soon-to-be wed, the vast number who for some reason believe June is the only correct month in which to marry.

To the commercial photographer, this crush of business in three months brings an agony of dawn to dark labor. If he could change the calendar to suit his needs, he would double the number of days in each of the spring months. He would make it illegal to marry in June and stagger the commencements so that they would be equally divided among all the months of the year. Alas, that is only a dream, never to be realized—in my lifetime.

The reform of the calendar, as envisaged in The World Calendar, is one well within the realm of probability, and I, with other of my craft, am grateful for the efforts being made on its behalf. It is a quick and definite

help in our accounting. And, inasmuch as we deal constantly in dates and commemorative functions, we would find it immensely helpful as a simplification and regularization of the passage of the days.

For, bear in mind there is no anniversary which takes place without having as a sort of thirteenth guest the man with the lens. The guest of honor must be photographed to mark the day. The guests around the festive board must be similarly honored. Reunions, celebrations, sentimental occasions of all kinds, dates upon dates, days upon days, all of them require the immortality of the photographic plate.

Spring and the midsummer months of July, August, and September are notable as the season of the amateur camera fiend. All outdoors beckons and with lenses bare he pursues the lissom bather and the cloud-bosomy landscape. Today, there are more of his kind than at any time in history, thanks to the miniature cameras with lenses powerful enough to take photos in weak light and under difficult conditions.

The amateur is a watcher of the heavens, even as were the old astronomers and calendar-makers. He knows of the north to south and south to north travels of the sun and sets his camera accordingly, stopping it down to a pinpoint to allow for the glare of the August sun. He is a student of light and he figures into his total of factors the expanse of blinding snow that covers the ground in January, the great dome of blue sky that canopies the pair of canoers on the dark, forested lake in midsummer.

Slung on a strap about his neck, he carries an instrument which merits a place in any discourse on the calendar—the exposure meter. This, if you please, is a device for measuring light as accurate and scientifically correct as any other chronicled by writers on the calendar—the sun-dials, watches, and clocks, and a dozen different astronomical instruments. Using a photoelectric cell it measures for the camera the light on his subject and the needle on its small dial registers its figure regardless of clocks or seasons.

The watch you carry in your pocket is, after all, an arbitrary recorder. We could have an arrangement of 20 seconds to the minute or 100 minutes to the hour or any other you might devise and still have a day that accounted for the revolution of the earth. Its tick-tock tallies with the passage of the day, but not exactly. Only four times during the year does your watch, however accurate, stand at 12 o'clock when the sun is at the meridian. The exposure meter and the camera, however, are more precise. They deal with light, not with numbers.

As a matter of fact, the photographer, to function properly, must have three instruments: first, the exposure meter, to measure the finer nuances of light; second, the watch, for periods of one minute up to 24 hours; third, the calendar for the days, months, and years, for the seasons, and the phases of the moon. I could conceive of some genuis inventing a calendar in which the three instruments were combined in one final, perfect mecha-

nism for recording not only light as it passes but also its quality and depth.

My imaginary mechanism would be able to record intervals of time as little as 1/50,000th of a second up to the long stretches of months and years as recorded in the calendar. Such an instrument would be the first instrument that recorded all of time, down to the tiny fragments of a second. With it, the photographer would be able to use the merest flashes of darting light to reveal nuances of movement never seen before.

At 1/50,000th of a second we are in a weird and beautiful world of bewildering industrial and scientific possibilities, and as yet unexplored. With your naked eye watch a man hit a golf ball. The club seems to spoon the sphere upwards. Snap it with an ordinary camera at say 1/100th of a second and what have you? The clubhead and ball lie companionably side by side. But at ultra high speed, what do we see? For the first time, we behold what actually has taken place. There is a dent in the ball where the iron struck, a large dent that remained an inconceivably brief instant and filled out again. This is a revelation made possible by light and time. It is not a rare phenomenon. It happens daily, hourly. We simply do not see it because our eyes, unaided, are not equal to the task. But it is nevertheless real. It suggests a day in the future when the camera will be an adjunct of daily life, in everybody's hand, on everybody's table, as essential to a satisfying life as it is to the astronomer beneath his colossal lens.

With ultra rapid camera in hand, we will be equipped with a stupendous magnifying glass that will not only demonstrate the quality of materials but also will fix and analyze movements. It will be a strange world, perhaps an interesting one. Personally, I don't want to be there.

I think a lazy life where a camera is set on the back porch, opened up wide, and left there for half an hour, more or less, to take a picture of the sea by the light of a crescent moon, is more pleasant.

At some of the agricultural experiment stations cameras have been focused for months on growing plants—and produced some of the most beautiful motion pictures I have ever seen. Now, television is here and I think it will bring in an era of lengthy photographing of news events. The newsreel men are handicapped by the brevity of their reels and the multiplicity of subject matter. For the moment at least, television will have to depend on news for the bulk of its subject matter. Which I think is an excellent idea, better by far than much of the so-called humor now being exposed to the air waves. We may see hours of news photography.

Fifty or 100 years from now, people will be sitting before their television sets and stare at a motion picture of the earth on which they are living. Some man will go up in a rocket and photograph the earth from a distance of a thousand miles or more, or less, and we shall see ourselves as others see us, but what is more important here and now, we will have visual proof of what the calendar has taught us these thousands of years.

200 YEARS IN RUSSIA

By Dr. Vera Rossovskaja

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(Translated and abridged by The Reverend M. A. de Sherbinin, from Chapter XII in *The Remote Past of the Calendar*, published in Leningrad, 1936.)

UP to the end of the 15th Century, the Russian year began on the first of March. Years were counted from the "creation of the world," and this event was placed in the year 5509 B.C.

From the end of the 15th Century to 1700 the Moscow kingdom took up the reckoning of time in September-years, that is, the year began with the first of September. It was only Peter the First who, about 1700, introduced the reckoning of years from January 1, as well as the *Anno Domini era*, that is from the birth of Christ; in doing this, he encountered churchly opposition.

Discrepancy between the Byzantine Easter and the sun did not greatly inconvenience the Russian Church at this time. But the reform adopted by Pope Gregory XIII could not pass unobserved. To discuss the Pope's proposal for a new style of calendar, Jeremiah, Patriarch of Constantinople, called together in 1583 an ecumenical council, which recognized the error of the old Julian calendar, but did not approve the new, giving preference to the Julian style for fixing the date of Easter. The same opinion was expressed in the answer given to Pope Gregory by the Churches of Russia, Venice, Greece, and Armenia. The letters of Patriarch Jeremiah of Constantinople and of Silvester of Alexandria still exist. They brand the Gregorian reform as "a harmful innovation of the Church of Rome, a Latin heresy and a fiction of Roman star-gazers," and this was followed with ecclesiastical arguments and scientific theories. In general, however, the obvious reason for the decision was that "it is better to be wrong with the sun than right with the Pope." So, under the pressure of the Eastern Church, the new calendar was rejected.

We have already stated that the error of the Julian calendar was seen in the Eastern Church even before it was in the West. But discussion of the need of correction touched only the question of Easter. The bold and daring thought of reforming the entire Julian calendar never arose in the minds of even the boldest theologians of Russia. It is therefore probable that reform of the calendar would have been rejected even if it had not originated with the Pope of Rome.

Civic reckoning of time began in Russia about the 17th Century. This was when calendars in book form began to appear. The first Russian calendar extant in manuscript is dated 1670, during the reign of Alexis Michaelovich.* The first printed calendar appeared in Amsterdam

*Tsar Alexis Michaelovich was the father of Peter the Great.

in 1702. In Russia the first printed calendar came in 1709. Its contents were very simple: sunrise and sunset, phases of the moon, a list of holidays, and a mass of matter on the household, the farm, and medical care.

This publication was followed in the year 1709 by "The Bruce Calendar."

James William Bruce (Russian name: Yacob Williamovich) was a statesman and friend of Peter the Great. His father had been banished from England by Oliver Cromwell and had entered the Russian Civil Service, being greatly favored by Peter the Great. Young Bruce showed a great love for learning, especially astronomy. The Tsar bought him a telescope, and Bruce's astronomical observations made him a leader in all scientific enterprises of the State.

It was in 1709 that he turned his attention to creating a calendar which remained for a long time a model for all similar works. The text was etched on copper and printed on six wooden boards or paper sheets. Bruce supervised the work, which was done mainly by the royal librarians, Basil Kiprianov and Alexis Rostovtseff. The title page says: "This new table shows the entrance of the sun into the region of the 12 zodiacs; also the rising and setting of the sun on the present horizon, as well as beyond this horizon." The second page is a church calendar, with data of feasts and holidays. The third page contains "foretokens or prognostications of time for every day according to planets." These "foretokens," ascribed to Bruce himself, left the memory of him as a wizard and an occult scientist.

On the fourth page is the inscription: "Foretokens of happenings for every day according to the course of the moon and sun," including information regarding favorable times to undergo bleeding, to pay a debt, to sue someone, to fix nuptials, and so on. On page 5, the portrait of Peter the Great is surrounded by the signs of the zodiac and allegorical figures of planets and seasons; while page 6 contains an explanation of all the preceding parts of the calendar.

More than 125 years before, in 1582, the Gregorian calendar had been adopted in many parts of western Europe. Russia continued with the Julian system.

As the political and private life of the country became developed, as commercial exchange arose with other countries, and as an exchange of scientific relations grew, the two calendars had to collide. Russia had to recognize willy-nilly the existence and even the preeminence of the Gregorian system.

It was in the 19th Century that this ambiguity in reckoning of time began to penalize Russia. The Department of Foreign Affairs had to use the Gregorian style in relations with foreign countries. The commercial and naval fleets were also obliged to reckon time according to the Western

calendar, and now those sciences which had a world character—such as astronomy and meteorology—were forced to adopt the Gregorian system. Finland and Poland had long ago accepted the new style, but Tsarist Russia was still obstinate and would not admit that the reform of the calendar had become an urgent necessity.

Still the fact remained that reform was inevitable. The question arose continually. So from time to time projects were discussed for adoption of the Gregorian style; and the Tsarist Government had to repeat its decision over and over.

In 1829 the Department of Public Instruction handed its recommendation for calendar revision to the Academy of Science. The Academy of Science petitioned the Government to accept the Gregorian calendar. But Prince Lieven, in submitting the project to Tsar Nicolas I, branded the proposal as "premature, unnecessary, and likely to produce upheavals, and bewilderment of mind and conscience among the people." He declared that "the advantage from a reform of this kind will be very small and immaterial, while the inconveniences and difficulties will be unavoidable and great." The Tsar was frightened and wrote on the report: "The comments of Prince Lieven are accurate and just."

Russia continued to live according to the old calendar. In 1860 the Berlin Astronomical Association approached the Russian Government to urge adoption of the Gregorian calendar. Its proposal was handed to the Church for decision, and once more science and religion were in conflict. Filaret, Metropolitan Archbishop, put his ban on "the calendar of Rome."

In 1864 Professor Medler of Dorpat University made an adroit suggestion for a compromise. He proposed that Russia introduce into the Julian calendar a correction which he had specially drafted for the countries of the East. He proposed to readjust the year, and then drop one leap year from the Julian calendar every 128 years, which would give a scientifically accurate calendar, and would have no relation to the "Latin heresy." At the same time the discrepancy with the Gregorian calendar would be very slight. However, Medler's project, in spite of its scientific merits, was turned down.

At last in 1899 a commission on calendar reform was chosen by the Russian Astronomical Society. The commission had official character and included representatives of all departments and ministries. D. E. Mendeleyeff was its active chairman. At its opening session, the commission definitely decided not to accept the Gregorian calendar—not because of its Roman origin, but because "the length of the Gregorian year equals 365.2425 days, and differs from the solar length by 0.003* fraction of a day, and such error in the light of the present condition of science cannot be tolerated." It was resolved to "unreservedly decide upon a reform

*EDITOR'S NOTE: This is evidently a typographical error, since this fraction should read 0.0003.

which would embrace all possible correctness in the light of science and history."

The first question in discussing the error of the Julian reckoning was to establish the length of the tropical year. Up to this time, Russian scientists had used the definitions of Hansen and Leverier. Now Mendeleyeff demanded more correct data. Accordingly, he wrote to the renowned American astronomer, Simon Newcomb in Washington, asking him for complete explanations regarding this subject, with the latest authoritative definitions of Newcomb himself. Newcomb answered promptly and fully, giving a detailed exposition of the question. He also sent a table, written in his own hand, of the variations or changes to which the length of the tropical year is subject in the course of centuries.

The commission was faced with two problems: (1) to correct the error grown in the course of time; and (2) to introduce into the calendar a corrective for avoiding error in the future.

For correction of future error the commission took up Medler's project, that is, to omit one leap year in every 128 years of the calendar, this being the correction which affords the greatest precision and the greatest approach to scientific accuracy.

In order to correct the accumulated error of the Julian calendar, it was necessary to drop 12 days from the reckoning. Here Mendeleyeff found himself opposed by Church and Synod. He argued that the reform was purely of civic character and that the Church could have all jurisdiction over its feasts and festivals. The battle raged on and on, without advantage to either side.

Meanwhile the commission began to study proposals for more sweeping calendar changes. Auguste Comte's 13-month year was discussed, as was de Petenyi's scheme for the decimalization of the year. Next came the project of the French astronomer, Armelin, being the result of researches by the French Astronomical Society, proposing to divide the year into four quarters of three months each, a proposal similar to that which was later to become world-renowned under the title "World Calendar."

The commission was approaching the conclusion of its labors, when one afternoon an imperial writ was served upon its chairman, transferring its activities to the Academy of Science. The nature of the procedure made it clear that the commission of the Astronomical Society must be dissolved. The purpose was to stop the work of the commission which had evidently reached certain conclusions not agreeable to the Government. Mendeleyeff protested, and declared that he saw no reason why both the Academy of Science and the Astronomical Society should not simultaneously study the subject of calendar reform.

So his commission continued its work. But most of its members, who represented government departments, gradually gave up attending the

sessions. Within a few months Mendeleyeff was compelled to capitulate, and the commission accordingly closed its activity.

Meanwhile the calendar reform work of the Academy of Science had been clearly limited by a royal letter informing them that they were to take as their guidance the remarks of Prince Lieven's report to Nicolas I. These instructions operated as a clear prohibition of any calendar reform.

A wave of protest and indignation rolled over the country, particularly from the universities, which regarded the whole affair as a personal affront to Mendeleyeff, particularly as it was accompanied by failure to elect the eminent Professor to membership in the Academy. The huge public protest was comparable to a similar display of public opinion which met the excommunication of Leo Tolstoy, who happened in this instance to share the views of Mendeleyeff in regard to the need for calendar reform. "It is obvious," Tolstoy wrote, "that the eloquent demand of our century and of modern life will not stop before any difficulties, and therefore undoubtedly a practical solution of the calendar question is near."

The Calendar Reform Committee of the Academy of Science held its first meeting in 1900. No further session was held until 1906, when the main business was the appointment of a subcommittee "for current labors." A third session was to have been held in the following year to receive the report of the subcommittee, but it never materialized.

Calendar reform had been effectually stifled. Not a single voice was raised in its behalf, except that of mathematical Professor Markof, who annually annoyed the Academy of Science with a resolution demanding a "progress report" from its Calendar Committee. In 1918, after the Revolution and the complete separation of Church and State, Lenin raised the question of calendar reform, and after a brief investigation of the subject, published a decree directing the adoption of the Gregorian style, "for the purpose of being in harmony with all the civilized countries of the world."

The introduction of the Gregorian calendar, however, does not assume that the question of calendar reform is permanently settled in Russia.

OBITUARY NOTES

DR. JOHN H. FINLEY, Editor Emeritus of *The New York Times*, died on March 7, at the age of 76. By his death calendar reform loses a valued friend. His interest in calendar reform was shown in many fine editorials on the subject which appeared in *The New York Times*.

DR. TSAI YUAN-PEI, Chinese elder statesman, educator and publicist, died on March 5 in Hong Kong. He was the president of the Academica Sinica, which promoted scientific research. Actively interested in calendar reform, he had been a member of The World Calendar Association since 1936.

Other deaths among the membership of The World Calendar Association include: *Prof. Ingo Hackh*, Professor of Chemistry, College of Physicians and Surgeons, San Francisco; *Rev. W. J. Johnstone*, St. Paul.

CURRENT PRESS COMMENT

Calendar Exhibit

Nashville (Tenn.) Banner

The World Calendar plan is being studied seriously throughout the world. It is visualized—in an exhibit in the New York Museum of Science and Industry in Rockefeller Center, New York City, where a great many persons are furnished an opportunity to obtain a sort of bird's-eye-view of how men have reckoned time through the ages. They behold the defects in the existing "horse-and-buggy" arrangements for the measuring of time, and other more recent arbitrary adjustments of the Julian calendar which were partly amended by the Gregorian calendar, when George Washington was a young man.

The calendar can be made to conform to a 12-month equal-quarter plan of revision, which meets the approval of thoughtful persons who have studied this subject. Fourteen governments in different parts of the world have approved The World Calendar plan. It rearranges the length of the familiar 12 months, equalizes the quarters and makes the calendar perpetual, every year the same. The first month of every quarter has 31 days, and the other two months, 30 days. Every quarter begins on Sunday and every year also begins on Sunday, January 1. The World Calendar harmonizes with the solar year and its four seasons, by adding an extra Saturday at the end of every year and an extra Saturday in leap years. It all makes sense, which is why sensible persons are convinced that it should be put into world use.

Islamic Calendar Difficulties

New York Nautical Gazette

Shortly after the war in Europe began, the Indian Government issued a warning to pilgrims who intended to make the annual trip to Mecca and Medina that there would be no sailings from Indian ports to Jeddah. That was a blow, indeed, to the devout who planned on being at the holy sites on January 19, 1940. To some Occidentals this interference may have appeared to be of minor import but to the fortunate ones of India's 70,000,000 Moslems who were bent on this holy journey, it was straight exclusion by non-believers. The British administrators were quick to realize that these followers of the Prophet were entitled to consideration. This war is a long way off and reasons for the conflict must be very vague to the lower castes in India. So, the word came from London that the water transportation for the pilgrims would be resumed and they could be at the scene of the Hegira at the appointed time.

The maintenance of shipping services for the thousands who make this sacred journey must be difficult for vessel owners because of the Islamic calendar. Though it has 12 months which have alternate 29 and 30 days, it is based on the lunar system. There is a deficiency in the Moslem year of about 11¼ days as compared to the solar year which our Gregorian calendar uses. As the Mohammedans began their reckoning from the Hegira in 622 A.D., this year is 1359. Seasons mean nothing and in approximately 32 years a holy day works itself around the whole circle of the solar year. There are further complications in India because 14 other important calendars are extant in addition to the Gregorian, Mohammedan and Jewish systems. The Government of India is charged with the responsibility of preparing each year an enormous almanac so that seasons, festivals, and holidays can be determined and coordinated with historical dates. In these arbitrary cycles, the Moslem period of mourning falls in certain years at the very time the Hindus are celebrating feast-days.

The doctrine of estoppel runs against those of us who would set up the solar system as a perfect achievement. Our calendar contains many inconsistencies but some day it may be rectified with the adoption of The World Calendar. The British shipowners who provide the transport services for the Islamic zealots from India to the Red Sea port can arrange sailing dates with exactitude. But the American transportation companies now have a confusing and divided problem for our Thanksgiving celebrations. Who knows where it will be this year? We hope on a Monday.

EXCERPTS AND REVIEWS

The Year 1940

By Dr. B. F. Yanney

Professor of Mathematics, Wooster College

THE calendar for the year 1940 is exactly the same as that of the year 1912. As is well known, there are seven patterns of leap-year calendars, each beginning on a different day of the week. The one for the new year begins on the day of the week known as Monday. Since a leap year has one more day than a common year, and since a common year ends on the same day of the week as the one on which it begins, this year will end on a Tuesday. It is thus seen that the year following a leap year will begin two days later in the sequence of days of the week than the day on which the leap year began. This fact, however, only partially explains why any given leap-year calendar is repeated within a century every 28 years. Our calendar system is all very complicated, and one wonders at every recurrence of a new year why a simpler system was not adopted years ago.

The idea of leap year is of long standing. Even before the time of Julius Caesar calendar-makers busied themselves with plans for fitting the extra day of such a year into the standard yearly calendar so as to disturb the general system as little as possible. Julius Caesar's device was one of the cleverest of which we have any record. To understand the full significance of this device it is necessary to be familiar with the Roman calendar system as Caesar with the aid of the Egyptian astronomer, Sosigenes, had planned it. There were three marked days in each month. These were the Calends, the Nones and the Ides. The other days of the months were designated by a peculiar system with reference to these three marked days. Each day of each month of the standard Julian calendar had its fixed designation. It was a perfect system, therefore, for a 365-day year. But how dispose of the extra day in a leap year? That was Caesar's problem. This was the way he did it: He repeated one of the days of the shortest month of the year, which was February. The day repeated was the sixth day before the Calends of March, and it was called *bissextilis*. And this device left the designations of the other days of the month unchanged. It is from this circumstance that the year of 366 days became known as the bissextile year, the old name for leap year.

It is hardly necessary, perhaps not even worth while, to call attention again to the defects of our calendar, which defects are accentuated by the way in which we today dispose of the extra day of leap year. For it should be noted that the present way of disposing of this extra day affects every one of the ten succeeding months of the year. Not only so, but it affects the calendar of every succeeding year. This fact alone should suffice to bring about a speedy reform of our calendar system so that we might have for our day and generation a calendar as perfectly simple as was the Julian calendar at the outset for the Roman day and generation.

People are becoming more and more conscious of the need for simplification of the calendar. The so-called World Calendar proposed by The World Calendar Association has definitely established itself as the one and only plan with promise of ultimate adoption. More countries are ready now than were ready at the end of last year to cooperate in the enterprise of calendar reform, and even among these are some countries that are engaged in war.

A Clarification

By Rev. Edward S. Schwegler, D.D., Buffalo

IN the *Journal of Calendar Reform* for the third quarter of 1939, pp. 142 *sqq.*, there is a contribution to the history of the calendar entitled "A Document from 1751." This, we are told, is a hitherto forgotten pamphlet, printed by Benjamin Franklin for the Society of Friends, and "constitutes the acceptance by the Quakers" of the Gregorian calendar.

Although the document is presented as a purely historical matter, it contains a passage which must certainly have been quite offensive to your Catholic readers,

and should not be allowed to pass without at least a footnote.

"The following ages of Popish superstition," says the passage, "not only indulged their proselytes in the use of such heathenish names and customs (i. e., the pagan names of the weekdays and months), but also invented and introduced other unsound and unscriptural practices in religion." First of all, our footnote will remark that "Popish" is an opprobrious epithet which no modern writer of good taste would use. Then, the footnote will point out that the popes were the greatest opponents of superstition throughout the Middle Ages, as may be proved by many papal documents. And finally, we will note that the Church never accepted the heathenish names for the days of the week. Right down to the present moment, the Church's nomenclature for the weekdays is as follows: *Dominica, feria secunda, tertia, quarta, quinta, sexta, sabbatum:* that is, Lord's Day, second weekday, third, fourth, fifth, sixth, sabbath. As for the pagan names of the months, it must be remembered that they were already sanctioned by immemorial use before the Church was ever founded. Churchmen probably connected February as little with Februa as we connect December with ten (decem). Nevertheless, it should not be forgotten that the Church's practice and teaching did in some cases produce different names for the months. Thus, among the Saxons, January became *Aefter-Yula,* or After Christmas; April was *Oster-Monat,* Easter Month.

There follows, in our objectionable passage, something that has no relation to calendar reform at all, and is quite typical of the anti-Catholic animus that characterized so many of our otherwise admirable colonists. "For when the profession of the Christian religion became national, multitudes of the heathen priests, whose interest lay in the performance of rites, ceremonies, and sacrifices, embraced prevailing Christianity with selfish views, and labored early with too much success to find employment for themselves by imposing on the people a new set of ceremonies and sacrifices, bearing some resemblance to those which in their former state of heathenism they had been accustomed to. From this corrupt source sprang the Popish (sic) sacrifice of the mass...."

On the contrary, the Christian priests were in continual opposition to the heathen priests, and the Church did all she possibly could to wean the people from paganism. For only one example, take the feast of the Circumcision, which the Church made a holy day of obligation in an attempt to counteract the revelries and excesses of the pagan New Year.

Then, to say that the sacrifice of the Mass had its origin in the corrupt practices of paganism is to display an ignorance of history. The origin of the Mass is the Last Supper, and the occasion of the Last Supper was the Jewish Pasch.

I hope these notes do not belabor points that are sufficiently obvious. I know that the document which occasions them was reprinted purely as an historical contribution. Yet I think its objectionable portions call for at least a brief refutation in the *Journal.* Otherwise, some fine day, you may find an uninformed scribe demonstrating from the *Journal of Calendar Reform,* Vol. IX, No. 3, p. 145, that "Popish superstition" drew from "corrupt sources" "heathenish names and customs," and "invented and introduced other unsound and unscriptural practices in religion."

"Time—Marches On!"

By John Temple Graves, II

In *Age Herald,* Birmingham, Ala.

WE are too timid about time as it marches on to dare any changes in its squad, platoon, company or battalion formations. But we are interested, and we note that the new World Calendar was endorsed by the General Federation of Women's Clubs at its national convention in San Francisco last May. The chairman of the Federation's committee on calendar reform, incidentally, is Mrs. Rowland H. Latham of Asheville, N. C. She presented the resolution. The proposed World Calendar would do much more, of course, than merely make certain holidays come always on Monday. Easter Sunday could come always on April 8, Ash Wednesday on February 22.

Proponents of this new calendar are working to have it adopted all over the world on December 31, 1944, as that is a time at which "natural transition" could take place.

FROM THE MAIL BAG

Future historians would thank us if we could place the dates so that the weekday and the month-day always came together. For example, if an historian finds the date September 13, he immediately knows that it was on Wednesday in the middle of the week. This might give a different interpretation to an event than would be given if the date were September 11, which he would know happened directly after a Sunday.—Dr. Dixon Ryan Fox, President, Union College, Schenectady, N. Y.

We congratulate you heartily, and wish all the members of your Association bodily and spiritual well-being in order to carry on your great work.—Leontios, Metropolitan of Paphos, Locum Tenens of the Archiepiscopal Throne of Cyprus.

I am interested in calendar reform.—Dr. G. Patterson, former Cuban Ambassador to the United States.

I assure you of my continued support in this great movement.—Mrs. Gustav Ketterer, Chairman, Department of Legislation, General Federation of Women's Clubs, Philadelphia.

Convinced that the proposed reform is timely and would prove beneficial.—John Crosby Brown, Pres., Tambly and Brown, Inc., N. Y. C.

It's a good idea to bring order out of confusion.—F. F. Flanagan, Pres., Penn Tobacco Co., Greenwich, Conn.

I believe that talk about World Federation will more than anything else—when peace comes—make likely and lasting a World Federation in Time.—Rabbi Martin M. Weitz, Kenosha, Wis.

One of the most valuable aspects of the public's mind is the real thought that is being given to post-war times. It is in this connection that calendar reform, in my opinion, can most profitably be introduced.—Lt.-Col. J. Murray Muir, Sec'y, Rational Calendar Association of Canada.

It is indeed a privilege to have a small part in the campaign to arouse interest among the masses in calendar reform.—Prof. A. M. Harding, Univ. of Arkansas.

Since my early childhood days in school the bane of my life has been the ever-conscious un-uniformity of recurring dates, days and months. Speed the day when your good work will bring some degree of order out of the present chaotic system of dates and dating.—Senator George A. Lovejoy, Seattle.

The advantages of The World Calendar are so obvious that I think the business men of America should, through their Chambers of Commerce and their representatives in Congress, see to its adoption at the earliest possible date.—M. J. Spinks, Methodist Hospital, Dallas.

As opportunity presents I shall continue to show to my fellow countrymen the merits of The World Calendar.—W. T. Hipps, Corsicana, Tex.

A good point in advocacy of this plan occurs to me. I am a constant user of devotional schedules. Find one limitation in their preparation because of the floating week with lack of correspondence of month and weekdays. It is impossible to select strictly appropriate subjects for Sundays and feast-days when the book is based on month-days to cover every year. —Rev. D. P. Acock, Clinton, S. C.

I am very much in favor of an improvement in the calendar and have found the magazine extremely interesting.—Willis Ogden Warren, Advertising, N. Y. C.

Heartily endorse the proposed new calendar.—Paul Cushman, Broker, N.Y.C.

I am strongly in favor of the proposed World Calendar and hope it may be possible very soon to get it adopted.—Rev. Edwin E. Giles, Norwich, England.

The Humanist Society of Friends has officially endorsed The World Calendar, and World Calendar dates will appear on their official minutes and other publications together with the traditional calendar dates.—L. H. Coate, Director of The Humanist Society of Friends, Los Angeles.

The World Calendar would meet the necessities of every walk of life. Its adoption would be evidence of true advancement in this world and would be as beneficial as "daylight saving." — Samuel R. Outerbridge, N. Y. C.

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ARGENTINA: Comité Argentino del Calendario Mundial, Rev. Father Juan V. Monticelli, S.S., Vice Chairman, Colegio Pio IX, Calle Adolfo Berro 4050, Buenos Aires.

AUSTRALIA: Committee on Calendar Reform of the Australian and New Zealand Association for the Advancement of Science, C. W. Allen, Secy., Canberra.

BELGIUM: Belgian National Committee on Calendar Reform, Professor M. Dehalu, President, l'Université de Liége, Liége.

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CHILE: Comité Chileno del Calendario Mundial, Prof. Alberto Cumming, Chairman, Calle Manuel Rodriguez, Santiago.

CHINA: Chinese Association for the Study of Calendar Reform, Dr. Ch'ing-Sung Yü, Director, National Institute of Astronomy, Kunming, Yunnan.

COLOMBIA: Comité Colombiano del Calendario Mundial, Dr. Eduardo Posada, Chairman, Consulado General de Honduras, Apartado 42, Bogota.

COSTA RICA: Comité Costarricense del Calendario Mundial (Igualmente de Guatemala, Honduras, El Salvador y Nicaragua), Don Teodoro Picado, Chairman, San Jose.

CUBA: Comité Cubano del Calendario Mundial, R. P. Mariano Gutierrez Lanza, Chairman, Belén Observatory, Havana.

DOMINICAN REPUBLIC: Comité Dominicano del Calendario Mundial, H. E., The Most Reverend Ricardo Pittini, S.C., Archbishop of Santo Domingo, Chairman, Ciudad Trujillo.

ECUADOR: Comité Ecuatoriano del Calendario Mundial. Dr. Rafael H. Elizalde, Chairman, Calle Cienfuegos 158, Santiago, Chile.

ENGLAND: Rational Calendar Association, C. David Stelling, Director, 38, Parliament Street, London.

FRANCE: Comité National pour la Reforme du Calendrier, Senateur Justin Godart, President: Paul-Louis Hervier, Secy., 5, Rue Bernoulli, Paris.

GERMANY: Deutscher Ausschuss für Kalenderreform, Dr. Grosse, Geschaftsfuhrer, Neue Wilhelmstr. 9/11, Berlin N.W. 7.—Der Weltbund für Kalenderreform, Dr. Rudolph Blochmann, Secy., 24 Lornsenstrasse, Kiel.

GREECE: Greek National Committee on Calendar Reform, Prof. S. Plakidis, Secy., Observatory of University of Athens, Athens.

HUNGARY: Hungarian Committee for Study of Calendar Reform, Dr. Paul Vajda, Secy., 9 Eotos Utca, Budapest.

IRELAND: Committee for Calendar Reform, E. K. Eason, Secy., 80, Mid. Abbey St., Dublin.

ITALY: Italian National Committee on Calendar Reform, Prof. Amedeo Giannini, Secy., Via del Seminario, 113, Rome.

MEXICO: Comité Mejicano del Calendario Mundial, Don Joaquin Gallo, Chairman, Observatorio Astronomico Nacional, Tacubaya, D. F.

PANAMA: Comité Panameno del Calendario Mundial, Don Octavio Mendez Pereira, Chairman, University of Panama, Panama.

PARAGUAY: Comité Paraguayano del Calendario Mundial, H. E. Senor Ministro Coronel don Luis Irrazabal, Chairman, Calle Moneda 1938, Santiago, Chile.

PERU: Comité Peruano del Calendario Mundial, Don Luis Montero y Tirado, Chairman, Casilla 220, Lima.

POLAND: Polish Committee for Calendar Reform, Albin Jakiel, Chairman, Krasiuskiego 21 m. 27, Warsaw.

SOUTH AMERICA: Comité Latino-Americano del Calendario Mundial, Rev. Eugenio V. Rosso, Acting President, Instituto Teologico Don Bosco, Cisterna, Santiago, Chile. This committee directs the activities of national organizations in Argentina, Brazil, Costa Rica, Mexico, Uruguay, Chile, Peru, Venezuela, Bolivia, Cuba, Ecuador, Colombia, Dominican Republic, Paraguay, and Panama. The honorary presidents of the committee are Dr. L. S. Rowe, Director-General of the Pan American Union, and H. E. Dr. Alfredo de Castro.

SPAIN: Spanish Calendar Reform Committee, Rev. Father Antonio Romano, S.J., Chairman, Observatorio del Ebro, Tortosa.

SWITZERLAND: Swiss Committee on Calendar Reform, Prof. Emile Marchand, Secy., Mythenstrasse 2, Zurich 2.—Comité International de Coopération de l'Association Universelle du Calendrier, M. Raymond Mage, Secrétaire Général, Palais Wilson, Geneva.

TURKEY: Committee on Calendar Reform, Prof. M. I. Dereoglu, Secy., P. O. Box 1121, Hanhaym Han No. 1, Istanbul.

URUGUAY: Comité Uruguayo del Calendario Mundial, Prof. Alberto Reyes Thevenet, Chairman, Liceo de Ensenanza Secundaria Hector Miranda, Calle Sierra 2268, Montevideo.

VENEZUELA: Comité Venezolano del Calendario Mundial, Don Edgar J. Anzola, Chairman, Apartado de Correos No. 207, Caracas.

YUGOSLAVIA: Yugoslavian Committee on Calendar Reform, Georges Curcin, Chairman, Poenkareova 25—III, Belgrade.

EDITORIAL PARAGRAPHS

Those devoted to improvement of the calendar have long been agitating for a Thanksgiving Day reform which will not only move the holiday up to where Roosevelt has placed it but also put it on a Monday instead of a Thursday.—Erie (Pa.) *Dispatch-Herald.*

There are plenty of good reasons why the present time-system should be superseded by a more practical one.—Lansing (Mich.) *State Journal.*

Fixing the Thanksgiving Day holiday on a Monday instead of a Thursday is an interesting and original suggestion. If change there has to be, Monday would be ever so much preferable to Thursday.—Bristol (Conn.) *Press.*

This World Calendar plan has distinct advantages from a business point of view, in addition to the fact that national holidays would have always a definite time and date conveniently located at the week-end for maximum enjoyment.—Dunnville (Canada) *Gazette.*

There was in the beginning no especial reason why Thursday was chosen as the date for Thanksgiving.—Huntington (W. Va.) *Herald-Dispatch.*

Clergymen, editors, teachers, business men and lawyers have studied The World Calendar plan and given it hearty approval. —Weston (Mass.) *News.*

The calendar is a human institution and still has its defects, although it has been redesigned half a dozen times.—Jackson (Mich.) *Citizen-Patriot.*

For our part we hope The World Calendar Association does make a success of it, if only because of the irrepressible spirit with which they seek their objective.—Cedar Rapids (Iowa) *Gazette.*

Before Lincoln's time there were Thanksgiving days, but they fell on varying days of the week, more often Monday than Thursday.—Durant (Okla.) *Daily Democrat.*

Probably at some future date, we shall find a uniform, common-sense calendar in effect.—Granby (Canada) *Leader-Mail.*

All the hubbub attendant on the decision of the President to change Thanksgiving Day from the last Thursday in November to the fourth Thursday would have been avoided under the system of time contemplated by The World Calendar Association. Some strong nation should take the initiative and start to put the idea over. Why not the United States?—Marinette (Wis.) *Eagle-Star.*

So far as a layman may see, the calendar reformers have logic aplenty behind their arguments, and we hope the new calendar will be adopted.—Bradford (Pa.) *Herald.*

Understanding of what has happened to the calendar in the past should make it easy to reform it once more in accordance with one or another of the scientific proposals.—Plainfield (N. J.) *Courier-News.*

For many years we have been interested in seeing a change in the calendar, making it more practical and comprehensive.—Fulton (Mo.) *Sun-Gazette.*

Shortcomings of the calendar are so obvious and familiar that we overlook them. —Columbus (Ohio) *Dispatch.*

There would be many benefits if The World Calendar Association, Inc., could succeed in their aim to have the calendar so changed that each quarter would be 91 days long, would begin on Sunday and end on Saturday.—Liberty (Mo.) *Advance.*

If the calendar is revised according to the plan proposed by The World Calendar Association, Washington's birthday probably would be celebrated once more on February 11.—Joplin (Mo.) *Globe.*

The World Calendar Association is working earnestly to bring about calendar reforms that will systematize and make uniform each successive year. — Waterbury (Conn.) *Democrat.*

The world has changed in most of its aspects, so it seems to be about the time in which we should change the calendar also. —Belleville (Ill.) *News-Democrat.*

This year was the chance of a lifetime for some great leader to convince our old world of advantages of the new World Calendar, a scientific, logical and practical change from that method of reckoning time in uneven chunks which has afflicted the world since the period of Julius Caesar and Pope Gregory.—Gunnison (Col.) *News.*

After Reading Please Pass On to Others

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VISIT

THE WORLD CALENDAR EXHIBIT

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Journal of CALENDAR REFORM

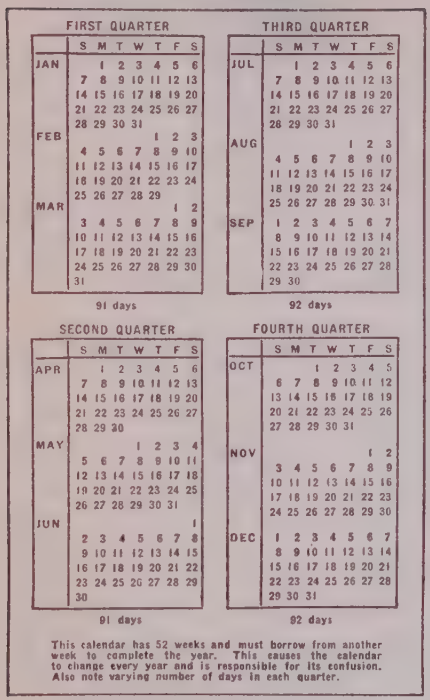
SECOND QUARTER

1940

1940

A LEAP YEAR

PRESENT GREGORIAN CALENDAR



FIRST QUARTER

	S	M	T	W	T	F	S
JAN		1	2	3	4	5	6
	7	8	9	10	11	12	13
	14	15	16	17	18	19	20
	21	22	23	24	25	26	27
	28	29	30	31			
FEB					1	2	3
	4	5	6	7	8	9	10
	11	12	13	14	15	16	17
	18	19	20	21	22	23	24
	25	26	27	28	29		
MAR						1	2
	3	4	5	6	7	8	9
	10	11	12	13	14	15	16
	17	18	19	20	21	22	23
	24	25	26	27	28	29	30
	31						

91 days

THIRD QUARTER

	S	M	T	W	T	F	S
JUL		1	2	3	4	5	6
	7	8	9	10	11	12	13
	14	15	16	17	18	19	20
	21	22	23	24	25	26	27
	28	29	30	31			
AUG					1	2	3
	4	5	6	7	8	9	10
	11	12	13	14	15	16	17
	18	19	20	21	22	23	24
	25	26	27	28	29	30	31
SEP	1	2	3	4	5	6	7
	8	9	10	11	12	13	14
	15	16	17	18	19	20	21
	22	23	24	25	26	27	28
	29	30					

92 days

SECOND QUARTER

	S	M	T	W	T	F	S
APR		1	2	3	4	5	6
	7	8	9	10	11	12	13
	14	15	16	17	18	19	20
	21	22	23	24	25	26	27
	28	29	30				
MAY				1	2	3	4
	5	6	7	8	9	10	11
	12	13	14	15	16	17	18
	19	20	21	22	23	24	25
	26	27	28	29	30	31	
JUN							1
	2	3	4	5	6	7	8
	9	10	11	12	13	14	15
	16	17	18	19	20	21	22
	23	24	25	26	27	28	29
	30						

91 days

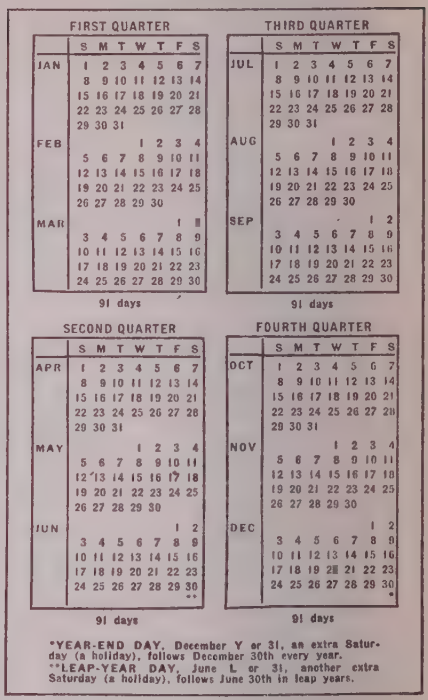
FOURTH QUARTER

	S	M	T	W	T	F	S	
OCT				1	2	3	4	5
	6	7	8	9	10	11	12	
	13	14	15	16	17	18	19	
	20	21	22	23	24	25	26	
	27	28	29	30	31			
NOV						1	2	
	3	4	5	6	7	8	9	
	10	11	12	13	14	15	16	
	17	18	19	20	21	22	23	
	24	25	26	27	28	29	30	
DEC	1	2	3	4	5	6	7	
	8	9	10	11	12	13	14	
	15	16	17	18	19	20	21	
	22	23	24	25	26	27	28	
	29	30	31					

92 days

This calendar has 52 weeks and must borrow from another week to complete the year. This causes the calendar to change every year and is responsible for its confusion. Also note varying number of days in each quarter.

PROPOSED WORLD CALENDAR



FIRST QUARTER

	S	M	T	W	T	F	S
JAN	1	2	3	4	5	6	7
	8	9	10	11	12	13	14
	15	16	17	18	19	20	21
	22	23	24	25	26	27	28
	29	30	31				
FEB				1	2	3	4
	5	6	7	8	9	10	11
	12	13	14	15	16	17	18
	19	20	21	22	23	24	25
	26	27	28	29	30		
MAR						1	2
	3	4	5	6	7	8	9
	10	11	12	13	14	15	16
	17	18	19	20	21	22	23
	24	25	26	27	28	29	30

91 days

THIRD QUARTER

	S	M	T	W	T	F	S
JUL	1	2	3	4	5	6	7
	8	9	10	11	12	13	14
	15	16	17	18	19	20	21
	22	23	24	25	26	27	28
	29	30	31				
AUG				1	2	3	4
	5	6	7	8	9	10	11
	12	13	14	15	16	17	18
	19	20	21	22	23	24	25
	26	27	28	29	30		
SEP						1	2
	3	4	5	6	7	8	9
	10	11	12	13	14	15	16
	17	18	19	20	21	22	23
	24	25	26	27	28	29	30

91 days

SECOND QUARTER

	S	M	T	W	T	F	S
APR	1	2	3	4	5	6	7
	8	9	10	11	12	13	14
	15	16	17	18	19	20	21
	22	23	24	25	26	27	28
	29	30	31				
MAY				1	2	3	4
	5	6	7	8	9	10	11
	12	13	14	15	16	17	18
	19	20	21	22	23	24	25
	26	27	28	29	30		
JUN						1	2
	3	4	5	6	7	8	9
	10	11	12	13	14	15	16
	17	18	19	20	21	22	23
	24	25	26	27	28	29	30
							**

91 days

FOURTH QUARTER

	S	M	T	W	T	F	S
OCT	1	2	3	4	5	6	7
	8	9	10	11	12	13	14
	15	16	17	18	19	20	21
	22	23	24	25	26	27	28
	29	30	31				
NOV				1	2	3	4
	5	6	7	8	9	10	11
	12	13	14	15	16	17	18
	19	20	21	22	23	24	25
	26	27	28	29	30		
DEC						1	2
	3	4	5	6	7	8	9
	10	11	12	13	14	15	16
	17	18	19	20	21	22	23
	24	25	26	27	28	29	30
							*

91 days

*YEAR-END DAY, December Y or 31, an extra Saturday (a holiday), follows December 30th every year.
**LEAP-YEAR DAY, June L or 31, another extra Saturday (a holiday), follows June 30th in leap years.

EACH YEAR DIFFERENT

This calendar is always different from year to year.

The quarters are unequal in length. In leap years the first half-year has 182 days; the second, 184 days.

Each quarter begins and ends on a different day of the week.

Each month begins and ends on a different weekday.

The months have a varying number of weekdays.

Each year begins on a different weekday.

This calendar is unbalanced in structure, unstable in form, and irregular in arrangement.

SOON YOU WILL BE DISCARDING THIS OBSOLETE CALENDAR.

EACH YEAR THE SAME

This 12-month equal-quarter calendar is good for every year.

The quarters are equal in length.

Each quarter begins on Sunday and ends on Saturday, contains 3 months—13 weeks—91 days.

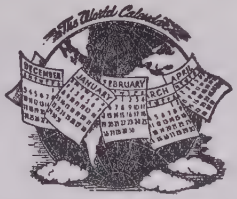
Month-dates always fall on the same weekdays. Each month has 26 *weekdays*—plus Sundays.

Each year begins on Sunday.

Year-End Day and Leap-Year Day, the extra Saturdays, are world-holidays.

This revised calendar is balanced in structure, perpetual in form, harmonious in arrangement.

SOON YOU WILL BE USING THIS UP-TO-DATE CALENDAR.



LET US ENCOMPASS THE EARTH WITH A NEW ORDER OF TIME

VOL. X SECOND QUARTER, 1940 No. 2

SYMBOLIZING with vitality and color the new sense of order and unity which the adoption of The World Calendar will send pulsing through every department of modern life, is a series of 18 pictures which have just been developed for The World Calendar exhibit in the New York Museum of Science and Industry.

These pictures, reproduced from paintings especially made for the purpose, portray man's efforts to work out a system of measuring Time which will enable him to carry out his various pursuits in orderly fashion.

Starting from man's earliest time-sense—the separation of day and night—the pictorial story presents the different milestones of the journey through the years. It pauses to depict such historic and significant moments as the working-out of the solar calendar by the Egyptians from their study of the sky and the shadows thrown on the desert by the pyramids. Julius Caesar ponders his adaptation of the solar calendar and decrees the leap-year day with the irregular months we now have. Augustus rearranges the Julian calendar on the basis of the four seasons. Constantine introduces the week with Sunday as a day of worship. And finally Pope Gregory consults the scientists of his day on an adjustment of the calendar toward a closer approximation of scientific accuracy, but which failed to adjust the irregularities of the months, the haphazard arrangement of which complicates our activities today.

Most dramatic of all are the pictures which show the bearing of The World Calendar upon every phase of modern living. In industry, in business, in travel, in work and play, the even divisions of days, weeks, and months are seen to bring order and system into a complex world.

With a uniform year of *exactly* 52 weeks, four equal quarters, and two equal half-years, with the Year-End Day, the *world holiday*, as the keystone, cementing greater unity and friendship in a symmetrical arch of Time, the pictures show the diverse streams of life flowing smoothly along, more harmoniously, more confidently, more colorfully than ever before.

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CALENDAR REFORM

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1940

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CHARLES C. SUTTER, Editor

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RADIO "GALLUPS" ALONG

By MARK HAWLEY

News Commentator, Mutual Broadcasting System

UNLESS you've been surveyed by *Fortune*, queried by Gallup or rated by Crossley you haven't a decimal point to stand on in this year of Our Lord, 1940. Therefore when Miss Elisabeth Achelis asked me to conduct a survey of my profession on "how-do-you-like-the-idea-of-a-World-Calendar-or-don't-you?" it all seemed quite in keeping with the trend of cross-sectionitis. Where could one turn to find a more survey-conscious group than my poll-doting brethren of radio? Where could one hope to find a group of business men so concerned with time? And finally but not fittingly, where, outside of Washington, could one find a group so willing to express a point of view, assured that it would get by the board of censors? Radio was a natural.

Armed with a few such encouraging thoughts, we dispatched a questionnaire to a large number of radio and advertising people. Unlike the census takers, we were not handicapped by questions pertaining to income. Therefore our results are frank and interesting, from General Harbord's (of the RCA Harbord's) "I have not had an opportunity to study this in detail but it does seem like an interesting idea," to a two-page letter from E. K. Bauer, business manager of WLW, Cincinnati, who not only reacted favorably but contributed some very constructive suggestions. This is the questionnaire which was sent out to a representative group of radio and advertising executives throughout this country.

Does the idea of a simplified and stabilized calendar appeal to you?.....

Would you favor the calling of an international conference by the United States looking toward definite legislation by nations for a revision of the calendar within the next five years?.....

Do you believe the equal-quarter World Calendar would benefit radio?.....

In what way would The World Calendar aid in your particular work?.....

Name..... Station or Company

Address..... City

Comments:

Of the 541 queries mailed, 127 were answered. To my unarithmetical brain that still makes 23 per cent, which represents a fairly high response even to the miracle men of radio. Among those who cared to commit themselves, 81 per cent gave their unqualified support to The World Calendar, and 12 per cent said they didn't like the idea at all. Thirty-six per cent took the trouble to send additional comments along with their approval,

four were undecided about the whole thing, and four, it seems, had moved to other addresses.

In order to acquire a true cross-section of the radio industry's reaction to The World Calendar, names were carefully selected from the multitude of departments and branches of the business.

Reflecting the attitude of business management and accounting to the inquiry: "In what way would The World Calendar aid in your business?" came the following answers: "Simplify records" . . . "statistically" . . . "in billing accounts and programming." "Making comparisons of periods possible" . . . "billing, comparisons, scheduling, programming and stabilization" . . . "simplify bookkeeping" . . . "fiscal statements, better comparisons, stabilize holiday schedules" . . . "preparing the annual budgets."

From the radio program departments whose task it is to fill the hours of the day with entertainment came the following response: "Make schedules more uniform" . . . "simplify program scheduling" . . . "stabilize schedules" . . . "Standardize bookings, assignments and commitments" . . . "mainly by keeping holidays on the same day" . . . "Equalize broadcast time units" . . . "simplify scheduling and the entire industry" . . . "No more confusion of dates. More accuracy with less memory effort."

Since a radio station lives by the TIME it sells, the sales department is its life blood. Here is the salesman's answer to the same question: "Simplify scheduling and selling" . . . "Fewer sponsors would desert the air in the summer time—I'm all for you" . . . "Unify yearly schedules for respective clients" . . . "any move toward time stabilization will simplify radio's contractual calculations" . . . "More systematic operation." . . . "billing and scheduling" . . . "More efficient." . . . "Save time—work." "Simplify recollections and prediction of dates." . . . "Save time and useless mental effort."

If sales represent radio's life blood, the advertising agencies are the red corpuscles. They buy the time which radio has to sell. A few of their answers to our questionnaire are as follows: "Eliminate chance and error in buying radio facilities" . . . "Easier to compute radio time contracts" . . . "Uniformity of contracts, anniversaries and holidays" . . . "Computing starting and ending dates of (advertising) campaigns" . . . "Equalization of quarters, i.e., month-dates always on same weekdays." . . . "Making each year comparable, i.e., each month and each week comparable to that of preceding year." "Uniformity" . . . "the fact that all quarters are the same —is it" . . . "Simplifying (advertising) schedules and contracts."

While commenting favorably on The World Calendar and expressing the wish to see such a simplified system in use, Mr. Leon Levy of WCAU, Philadelphia, and Mr. E. B. Craney of KGIR, Butte, Montana, added that they used the 13-month calendar as the only way they had found to make accurate comparisons. Pertinent are the following miscellaneous comments which came as the result of our questionnaire: Mr. W. K. Bauer, WLW,

Cincinnati, Ohio, says: "I had never given any particular thought to the calendar as it affects radio, simply taking for granted certain inconveniences and working out my own problems. Now having thought about it, I will be interested to know the results of your survey."

Mr. John F. Pratt of WGAR, Cleveland, Ohio, comments: "Would not benefit radio any more than all business. Everybody benefits." From Mr. Harold A. Safford of WLS, Chicago, Illinois, comes the statement: "There is without question a definite need for a stabilized calendar, but until your movement brought this problem to focus, there seems to have been no concerted action taken to correct the present haphazard calendar system." A. J. Mosky of KGVO, Missoula, Montana, says: "Save a lot of time and confusion. Present calendar very unsatisfactory."

Mr. Frank Burker, KFVD, Los Angeles, writes: "This appeals to us very much—will be glad to do anything we can in its promotion." Mr. W. P. Hood, KWFT, Wichita Falls, Texas, sent in this statement: "With few exceptions, President Roosevelt's alteration of the Thanksgiving date was favored in this area, which would indicate a general disposition toward calendar revision through the entire year. Would like to know more about your plans." Miss Margaret Cuthbert, National Broadcasting Co., remarks that: "The World Calendar benefits to radio are too numerous to mention on such a small card." From Mr. G. F. Ashforker, WHBZ, Muskegon, Michigan: "It looks like a good idea." Mr. C. W. Corkhill, KSCJ, Sioux City, Iowa, states: "Personally—can see nothing but the benefits that would accrue with the new calendar."

Mr. Simon Gellard, WLTH, New York City: "Listening to the radio is a matter of habit and anything that will stabilize time will enable listeners to remember to tune in their favorite programs." Mr. Clay Morgan, NBC, New York City: "It is one of those things so simple, easy and sensible that it will take years probably to put it over." Mr. George W. Smith, WWVA, Wheeling, West Virginia: "I believe any plan that would standardize any time-unit, could not help but benefit radio broadcasting." Mr. W. E. Williams, WGRM, Grenada, Mississippi: "Why wait five years? Do it now." Mr. Harry Baldwin, Treasurer, Canadian Broadcasting Corp.: "I think Miss Achelis' plan has the real advantage of being less shocking to conventionalists than other systems which ignore the Gregorian and ancient arrangements of the months."

Time—an invisible but costly commodity which has become the foundation of a great new industry, that pays its employees the highest average wage in American business. Forty-four million radios have brought 100 million Americans into intimate contact with the rest of the world. The only industry which literally sells TIME over the counter has expressed itself clearly in favor of The World Calendar. This should be an indication The World Calendar Association is championing a winning cause.

DR. GAJARDO REYES' LEADERSHIP

Extracts from letters in tribute to the life and work of the late Dr. Ismael Gajardo Reyes, President of the Latin-American Committee for The World Calendar.

Dr. Ismael Gajardo Reyes died in Santiago, Chile, on October 24, 1939. A tribute to his progressive leadership for calendar reform by the Director of The World Calendar Association appeared in the *Journal of Calendar Reform*, 1939, p. 167. Since that time letters have been received from numerous friends and associates praising his tireless energy for calendar reform. The extracts given below indicate the wide range of this appreciation.

BACKGROUND AND PERSONALITY

By H. E. Don Agustin Edwards

Former Chilean Ambassador to Great Britain

CHILE lost a great citizen and scientist when the designs of Providence deprived my country of the remarkable personality of Dr. Ismael Gajardo Reyes.

At the age of 63, when there was still a great deal to expect from his powerful mentality, he passed away after having accomplished, in the sphere of hydrography, astronomy, history and calendar reform, achievements so remarkable that he succeeded in winning the respect and admiration of the highest scientific authorities in each and every of those sciences.

As a sailor, he left an unparalleled record in navigation discoveries in the unexplored seas, channels and estuaries of Southern Chile, one of which bears his name.

The brilliant cadet of the Chilean Naval School of 1887, completed his training in the British Navy and showed how perfectly he had assimilated the education received in accomplishing, when only a lieutenant, what others could have been proud to achieve much later in their career. His failing health prevented him from continuing the naval activities so brilliantly begun.

Sea life was too rough and exhaustive for his feeble body; but Navy's loss was Science's gain, for, on being forced to retire, he gave himself completely to scientific work, and, deeply attracted and interested in seismic phenomena as well as in the sidereal system, he entered the Seismological and subsequently the Astronomical Observatory.

For some years he edited the Annual Report of the Chilean Astronomical Observatory and he published some interesting pamphlets, among others the one entitled: *El Universo Sideral (The Sidereal Universe)*, and another: *Una visita a los Planetas (A Visit to the Planets)*. No less interesting was his contribution to prove that all predictions of seismic movements had no scientific bases, a work which was particularly useful in Chile

where so many theories have been given importance to prove that earthquakes could be announced and their precise causes discovered.

All this work of Gajardo Reyes, besides many others which would deserve a more detailed and profound examination, led him naturally to join the ranks of those who believe that World Calendar Reform is a necessary step for a more rational regulation of the world, its life and activities; and, as it has already been said by Mr. Charles C. Sutter, he was the untiring leader who convinced the Chilean Government of the advisability of placing before the League of Nations in 1937 a "draft convention" for calendar reform.

As the Chief Delegate for Chile in the League of Nations at that time, it was my privilege to present that "draft convention" to the League, and it is my honest duty to recognize now that I would have been unable to accomplish my task without the advice and guidance of Gajardo Reyes.

He was the soul of the movement and never did he fail to send me a word of support, encouragement and enlightenment to help to dispel the doubts and opposition which, naturally, arise whenever a new idea or reform of any kind is attempted.

Let us hope that with his death the movement to promote this reform will not be buried with him, but, far from that, the very fact that he is no longer among us will stimulate those who remain alive to continue the work as the highest tribute we could pay to his untiring and magnificent efforts.

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INFLUENCE ON LABOR

By GASTON GOYENECHE M.

Chilean Industrialist and Honorary Vice-President of the Latin-American Committee for The World Calendar

TO detail the work of that select spirit that was Ismael Gajardo Reyes is to make a report of continuous successes and efforts during more than 55 years of an industrious life.

As mariner, geographer, or astronomer he was able to stamp his work with that seriousness and altruism which only outstanding men possess.

I had the privilege of counting myself among his friends during almost his entire lifetime, and I could observe closely the intelligence, the enthusiasm, and the tenacity which he put into every task he undertook.

I remember as if it were today the ardor he showed when he explained to me, and when he tried to convince me of the benefits of every kind that the reform of the calendar would bring to humanity; and when he asked me, as an employer representative of the Government of Chile to the Pan American Labor Conference held in Santiago in January, 1936, to present a motion to the effect that that Conference approve the reform. I remember also the enormous satisfaction that I experienced when I had the plea-

sure of announcing to him that the motion presented by me had been approved unanimously by the Republics represented.

When Ismael Gajardo requested some help, it was impossible to deny him collaboration. He was so sympathetic, convincing, and sincere that there were no arguments that could be brought against him. This has been, without doubt, one of the secrets of his success in life.

Ismael Gajardo Reyes was one of those triumphant beings who in dying deprived us of enormous energies and enthusiasm which will be difficult to replace. It is only to be regretted that Divine Providence did not see fit to afford him the happiness of having seen fulfilled the greatest of his aspirations: the definite adoption of the reform of the calendar.

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INTERNATIONAL ACTIVITIES

By C. DAVID STELLING

Director, National Calendar Association, London, England

I NEVER had the good fortune to meet Dr. Gajardo Reyes, but we corresponded across 4,000 miles of ocean and I was always deeply aware of the zeal and enthusiasm with which he led the movement for calendar reform in Latin America. It was thanks to his personal efforts and the pertinacity with which he pursued the end in view that, on the initiative of the Chilean Government, the League of Nations Council adopted the significant resolution on calendar reform which embodied The World Calendar as the model calendar aimed at.

In my talks with Don Agustin Edwards, the Chilean Ambassador, in London, and with representatives of other South American nations at Geneva, I was made to realize that behind their official advocacy for reform lay a movement which could only have gathered the momentum which it had by that time acquired under the inspiration of some single-minded leader. That leader was Dr. Gajardo Reyes who, as a result of his searching and scholarly examination into the whole question, had acquired an enthusiasm for the cause which carried him past all obstacles.

Those who are fighting the battle for sane reform will long remember his splendid work and will be heartened and inspired by the success of his crusade which not only won for The World Calendar the official support of Latin-American nations, but played so important a part in obtaining the endorsement of the League of Nations Council for the reform.

More than this, those of us in Europe who under the vigorous leadership of Miss Achelis had been engaged in many years of spade work at Geneva and in the capitals of Europe, recognize that it was in the end, as an immediate result of Dr. Gajardo Reyes' energetic pioneering in South America, that the Council of the League of Nations brought calendar re-

form into the region of practical international politics by its endorsement of The World Calendar in submitting it to its members.

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WORLD VIEWPOINTS

By Alberto Cruchaga O.

Chilean Diplomat

THE campaign, which with untiring constancy has been carried on for years in order to achieve the fulfillment of the proposed reform of The World Calendar in a manner already well known to the learned circles of all countries, had in the erudite and indefatigable Chilean, Don Ismael Gajardo Reyes, who died in October, 1939, a well-informed as well as an enthusiastic participant.

The solid and vast knowledge of Dr. Gajardo, a mariner in his early years, later specializing in astronomy, meteorology, and mathematics, and always passionate in his study and fervent in his admiration of the exact sciences, qualified him in a privileged way to perform with efficacy and distinction the task which in the service of calendar reform he imposed upon himself.

The high and well-merited tribute paid to Dr. Gajardo by his colleagues in other countries—who, like him, moved by their convictions and enthusiasm, have put themselves in the vanguard in the struggle to bring about the reform of the calendar—is echoed by the gratitude and sympathy of the fellow countrymen and friends of this meritorious Chilean.

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General Eduardo Hay, Minister of Foreign Affairs of Mexico, states: "In deploring the loss of such a valiant element in the effort to implant The World Calendar as Dr. Gajardo Reyes was, and in wishing cordially that his successor may continue with equal success in the work undertaken by him, I offer you the assurance of my high consideration."

"I regret to learn," writes Dr. L. S. Rowe, Director-General of the Pan American Union and Honorary President of the Latin-American Committee for The World Calendar, "of the death of Dr. Gajardo Reyes, founder of the Latin-American Committee for The World Calendar. Through his able and devoted work not only at the head of the organization but also as the guiding spirit of the Chilean Committee he had accomplished much for the attainment of his goal. I feel sure, however, that because of the interest that he has aroused someone will carry on his work without setback."

"I agree with you," declares Dr. Alfredo de Castro, Minister of Uruguay to Belgium and Honorary President of the Latin-American Committee for The World Calendar, "that a great void has been left by the death of Dr. Gajardo Reyes, President of the Latin-American Committee for The

World Calendar, and I hasten to present my very profound condolences."

"We have lost in Dr. Gajardo Reyes," declares Father Eugenio V. Rosso, Acting President of the Latin-American Committee for The World Calendar, "our most devoted co-worker in South America. He worked disinterestedly for our ideal, The World Calendar, which he had always hoped to see fulfilled before his death."

The Chairman of the Argentine Committee, Dr. C. D. Perrine, writes: "I join with you in lamenting the untimely death of our Latin-American President, Dr. Gajardo Reyes. I fear that it will be impossible to find his equal. But of course you must try."

Dr. Enrique Gil, eminent Argentine attorney, says: "The death of Dr. Ismael Gajardo Reyes, a pioneer in this world movement, which is so impartial and which would bring such great results, has caused general sorrow. His personality was very well known in all America, and he has left in the Argentine Republic many friends who mourn his passing."

"We were all surprised," declares Captain Radler de Aquino, Chairman of the Brazilian Committee for The World Calendar, "to hear that Dr. Gajardo Reyes had passed away, in view of his untiring efforts on behalf of The World Calendar. I can only say it was a great privilege to serve with him in the great cause of calendar reform. In continuing our efforts towards the final goal Dr. Gajardo Reyes' work will always be before us, as an example and encouragement. The Brazilian Committee sincerely regrets to hear of his sad death and presents to you and to all our fellow members the expressions of our deepest sympathy and sorrow."

The Chairman of the Chilean Calendar Committee, Professor Alberto Cumming, says: "The death of a person so full of merits and virtues as Dr. Gajardo was has been a painful loss. He was an eminent scholar, full of great kindness and the spirit for work, and of an exemplary life. His death gave occasion to a keen manifestation of sorrow."

Writing from Turin, Italy, the Reverend Valentin Panzarasa, former President of the Chilean Calendar Committee, regrets "the death of such an important man for The World Calendar," and prays for the repose of the soul of Dr. Gajardo Reyes.

Dr. Eduardo Posada, Chairman of the Colombian Committee for The World Calendar, in regretting the death of Dr. Gajardo Reyes, writes: "For many years I have had a very friendly correspondence with this excellent gentleman, who was a great friend of Colombia."

M. Paul-Louis Hervier, Secretary of the French National Committee for Calendar Reform, writing from Paris, calls the work of Dr. Gajardo Reyes abundant and fruitful in many fields. He goes on to say: "For the benefit of calendar reform in Latin America, he was able to bring together competent forces, create good-will, interest the right people in it, and establish an amazingly efficient chain of understanding and work. When

the hour of the adoption of The World Calendar shall sound, it will be necessary to evoke the memory of Dr. Gajardo Reyes, who has been the best advocate of this useful reform."

The eminent Catholic authority on the calendar, the Abbé Chauve-Bertrand, states in a recent communication: "Dr. Gajardo Reyes accomplished much because his erudition was seconded by an activity that feared no obstacles. In Latin America, The World Calendar is inseparable from the name of Dr. Gajardo Reyes."

"It is with the most profound grief," declares Senor Don Luis Montero y Tirado, Chairman of the Peruvian Committee for The World Calendar, "that I have been informed by you of the passing away of Dr. Ismael Gajardo Reyes, who devoted most of his time and tireless energy to calendar reform. Although I did not know him personally I was able to appreciate him through the frequent correspondence we exchanged on matters of calendar reform, and I greatly admired his knowledge and enthusiasm."

Professor Alberto Reyes Thevenet, Chairman of the Uruguayan Committee, in regretting the loss of Dr. Gajardo Reyes, voices the desire to carry on the work for calendar reform and stands ready to continue to serve in the promotion of the ideas for which Dr. Gajardo Reyes stood.

Writing from Caracas, Venezuela, Senora Maria Luisa Escobar, former Chairman of the Venezuelan Calendar Committee, says: "I lament very much the loss of the eminent man of science, Dr. Ismael Gajardo Reyes, to whom The World Calendar owes so much because of the important work carried out in its behalf on the Latin-American continent."

"Dr. Gajardo Reyes' enthusiasm for calendar reform," states Miss Elisabeth Achelis, President of The World Calendar Association, "began in February, 1932. I well remember his first communication to us, voicing his wholehearted approval for The World Calendar and offering his support and service. With the stroke of his pen all sense of space and time was annihilated, for here we were working for the same cause in perfect understanding and cooperation, even though we were at opposite ends of the Western Hemisphere. It was a fine demonstration of the practical unity of nations and the brotherhood of man, expressing itself through this notable scientist, reformer, and friend, on a world-cause toward attaining a better world-calendar for all mankind to enjoy. We saluted Dr. Gajardo Reyes in life, and we honor him in death."

READY-REFERENCE CALENDAR

TO meet an ever-growing demand by readers for a ready-reference calendar card depicting both The World Calendar and the present Gregorian calendar for 1940, which would fit into a man's wallet or a woman's purse, a "Calendar Contrast" card has been developed. This card also gives briefly the story of the disadvantages of the Gregorian calendar and the comparative advantages of The World Calendar. Copies may be obtained by addressing requests to The World Calendar Association.

A CALENDAR FOR HOUSEKEEPERS

By Catharine Jackson Alger

NOT as an expert nor as a member of any unusual profession, but as one of innumerable housewives and mothers, I wish to make my lay comment on the proposed World Calendar. This calendar, with its orderly arrangement and predictable holidays, appeals to me as a piece of good housekeeping that the civilized world should carry out without further delay.

Even the worst housekeeper among us realizes the need of conserving time and energy, as well as money. If we sit around reading the newspaper instead of doing the dishes, if we spend time and cash at the movies rather than cooking a good warm and yet inexpensive supper, served at the moment the hungry hordes come in from play and work, we lose in the end. Planning ahead, and carrying out the plan in regular orderly fashion, following a definite routine, will always in the end give every one in the family more leisure and more fun.

Some of us instinctively realize the advantages of "having a place for everything, and everything in its place," but for the most of us, struggle, poverty, or deprivations, of one kind or another, are required to make us understand the power of long-term planning and of a regular march forward by means of the mapped routine. Children, even as much as adults (perhaps more sometimes), enjoy the rhythm in their lives that routine provides; and often ask for a regular series of jobs laid out and work to be accomplished rather than to be left at loose ends. Free play should, of course, enter their lives also, but within the area of long-term planning.

One of my children, for instance—and a very easy-going small boy too—asked us at one time whether we would prefer to climb a mountain or work at "being a workman." When we said that that was hard to answer as it all depended on the circumstances of the moment, he said, with youthful scorn, that it "was easy to answer." He went on to remark, "I would rather be a workman and work hard and earn money than to climb a mountain for nothing and just have fleas and flies coming up round me."

To be sure, this may not show an adventurous spirit, but there is a good deal to be said for a working plan rather than wandering along with the casual fleas and flies that one meets when no plan has been instituted.

The main point of this preamble, however, is to indicate that in a household a person at the head may go on easily and luxuriously with little planning and order, as long as time and money prevail. But, when either is more lacking, then a planned routine must enter the picture.

When we possess many material assets and feel secure that we shall have those for years to come, we do not feel the urge to conserve what we

have now, nor to prepare and plan with exactitude quite so carefully for the future. But when we have a scarcity of the assets or foresee an emergency when scarcity may occur, we then are particularly careful in planning ahead. In concrete family terms, we make over the clothes we have rather than buying new ones, we repair our automobile and do not turn it in for a more up-to-date contraption, we look far ahead to the family vacation so that we can all be together for one family jaunt rather than the coming and going of easier years, and we find it more important than in those years of greater ease and security that we should be enabled to make plans ahead successfully.

This brings me to the thesis uppermost in my mind as a housewife planning for the family year of holiday and school work. With the proposed World Calendar we could arrange family holidays together, as now we are not often able to do; we could plan ahead both our personal and group activities more clearly than now. How astonishing it seems that now we should positively require the aid of a calendar to make any engagements more than a week ahead. No one can make a business or personal date for the 17th of next month until she finds out whether that is Sunday or Monday. We are so used to this waste of time and words that we do not appreciate the easy simplicity of knowing, for instance, that the 17th of a particular month is always a fixed day of the week; such as January 17 which always falls on a Tuesday, the same day as it will in the other first months of every quarter. The mother of a family particularly should appreciate the new calendar, with all her problems of school days, business engagements, neighborhood clubs, children's parties, and conflicting holidays to plan for.

Just as a crisis in the family often provokes more careful planning ahead, as a housewife, I believe that also during a crisis in the world better planning should take place in all lines of endeavor. In time of plenty we trouble ourselves very little about any changes that do not seem to affect us at the moment with too much discomfort, but in time of struggle we are more inclined to look ahead toward betterment, and to work to that end.

It would seem, therefore, that *NOW is the time to push the change toward the proposed World Calendar.* As my father, Dr. Dugald C. Jackson*, an engineering educator, said to me recently, "The disturbed situation in the world is just the time to strongly agitate for the adoption of the new calendar." Furthermore, it is apparent that the time and worry we would save would contribute at least a little to the great need of our world for saving wasted energy!

History has shown that many improvements in the technique of civilized daily life have made even more rapid progress in a time of conflict than

*EDITOR'S NOTE: Dr. Dugald C. Jackson, former head of the Department of Electrical Engineering, Massachusetts Institute of Technology, was President of the American Academy of Arts and Sciences, in 1938 and 1939.

during a more peaceful period. In the matter of calendar improvement, for instance, the work in Spain for this reform went steadily forward even during the darkest days of the civil war in that country, until the Spanish Government officially approved The World Calendar. This is also true of China, where, in spite of the unceasing warfare and its attendant ills, a calendar reform survey was undertaken with the result that China is now one of the 14 nations to approve the new calendar.

Since Daylight Saving Time, which is even more popular in England and France than in this country, was put into effect during the last world war, it is obvious that we do not need to wait until peace is restored before we adopt a plan like the new World Calendar. Most certainly the head of a household does not wait until he has a better or more honest city government before he paints his house; nor, furthermore, when snow and wind rage without, does his wife refrain from making useful improvements indoors until that time may come when once more the storm has abated, and the family can peacefully plan larger improvements in their establishment. This is also true of an improvement such as The World Calendar.

The other day, when speaking of this needed change in the calendar, I remarked to a professorial friend of mine that I had heard objections to the change on the score of preference for the variety and unexpectedness of holidays and dates as they now are. My friend, the professor, said in his dry way, "A toothache is unexpected, but who wants it?"

It seems to me then, that not only is the present calendar a "pain in the neck" in modern language, but also as my friend suggested, "a toothache." Let's have the tooth out!

OBITUARY NOTES

MONSEÑOR DR. BELISARIO A. PHILIPPS, Archdeacon of the Cathedral of Lima, Peru, Councilor of the Comité Peruano del Calendario Mundial, died late in February in Lima. An active leader for calendar reform in Peru, he was instrumental in gaining his country's approval of The World Calendar. In announcing his death, Señor Don Luis Montero y Tirado, Chairman of the Comité, said, "He was a most capable man and very enthusiastic about the reform of the calendar. This is a great loss to us."

DR. JOHN HENRY TANNER, Professor Emeritus at Cornell University, died in Ithaca on March 11, at the age of 79. A hearty believer in The World Calendar, he was one of our earliest members, his membership dating from August 9, 1931.

THE RIGHT REVEREND GEORGE CRAIG STEWART, Bishop of the Protestant Episcopal Diocese of Chicago, died suddenly on May 2. He has been a member of The World Calendar Association for six years, and aided in securing the approval of The World Calendar by the Episcopal Church.

Other deaths among the membership of The World Calendar Association include Mr. I. I. Cammack, Superintendent Emeritus of public schools of Kansas City; Mr. Charles Israel, insurance executive of Cincinnati.

THE SOVIET CALENDAR

By Dr. Albert Parry

Author of *Whistler's Father* (Bobbs-Merrill, 1939)

IT IS generally known that the Soviet calendar is quite different from the old Tsarist and Kerensky ways of counting time, and that, in some vague and curious manner, it is a far cry from our Western calendar. A common error is, however, to suppose that the great change came immediately upon the Revolution of 1917-18. Actually, the main shifts did not arrive until 1929. It is true that the first—but not chief—reform was effected on January 26, 1918, when Lenin as chairman of the Council of People's Commissars signed a decree which cut 13 days from the Russian calendar, thus substituting the Gregorian system for the Julian. It is also true that in 1919-20, in an attempt to conserve fuel, an extraordinary ambitious daylight-saving method was tried out, with the result that Government employees had to come to their offices as early as five or six o'clock on summer mornings. Yet, outside of these two, no experiments with regard to time and its reckonings were Russia's plague or profit until 1929.

Beginning with October 1, 1929, Saturday and Sunday were legislated out of existence in the Soviet Union, the 5-day week taking the place of the old 7-day one. The new decree of the People's Commissars stated that the year, as before, would consist of 12 Western months, but that, instead of the previous system of four-odd weeks, each month would have six weeks. Each week was to have four working days, the fifth to be the Free Day. The extra five days of the year, known to the outside world as the 31st of certain months, would in due time be proclaimed national Soviet holidays. A few industries would have 6-day weeks, each consisting of five days of labor and one day of rest. While the majority of the Soviet people, employed on a 5-day week basis, would have a 7-hour working day (that is, each of the four working days of their week), the 6-day week men and women would work six hours a day (that is, each of the five working days of their week), so as not to be overworked by missing an extra day of rest a month. Annually, each worker was to have 72 days of rest, each day of 39 hours and five national holidays. Each worker was also to have an annual vacation from a fortnight to a month in length, depending on the importance or difficulty of the job.

Russians, both at home and abroad, were tremendously intrigued by the sweeping change. Reactions differed, of course. A newspaper of Russian émigrés in Riga, Latvia, printed a cartoon showing a Soviet soldier shooting to cruel death two young ladies placed against a wall and

blindfolded with bandages lettered "Saturday" and "Sunday," the cartoonist's caption reading: "For their bourgeois origin." Soviet newspapers carried cartoons, which lacked suggestions of bloodshed, but nevertheless agreed with the Riga idea that the Soviet week was being purged of its non-working elements. One cartoon, entitled "Six Will Not Wait for One," depicted six working days of the old week as men and women in laborers' garb pushing Sunday—a well-dressed but distressed gentleman—toward a factory entrance, the accompanying remark being: "Enough loafing from you!" Another Soviet cartoon, titled "The Purge of the Calendar," showed a stalwart worker beating the stuffings out of a calendar hanging from a clothes line. The figures and symbols scattering from the insides of the calendar to the ground were Sundays, various religious holidays of Christians, Jews and Moslems, and even the days of plain drunkenness on the part of un-class-conscious workers. Observers in the West, too, noticed the change and its seriousness. After the new calendar functioned for a year, *The World Tomorrow* of New York wrote in its October, 1930, issue: "The new Russian calendar is not merely a revolutionary gesture. It is a social experiment of supreme importance and it must be kept in mind when reading the news from Russia. Unobtrusive and seemingly unimportant on the surface, it carries within itself possibilities that are likely to be sensational."

Among the most sensational possibilities offered by the new calendar was the so-called *nepreryvka,* or the uninterrupted week, with its main feature—the staggered Free Day. A person working under the new system had a day off every fifth day, the result being that every day 20 per cent of a great mass of the population of the U. S. S. R. were at rest while the other 80 per cent worked. There were no common holidays for the country, except on the few annual occasions of national celebration. To simplify the somewhat complex situation, colored slips were issued to the populace, marking each man's and woman's day off. Corresponding to the five days of the newly established week, there were five colors: yellow, pink, red, purple, and green. The idea was that Soviet citizens would learn the colors of their friends and kin and so know who rested on what days—should there be any desire for visiting and joint celebration. Managements of the various State trusts announced that they would accept and consider applications from their employees who wished for the same Free Day. "Failing that," an American wisecracked in Moscow in November, 1930, "if one's color is purple, for example, one picks one's friends among the purple." He also suggested that Russians have their visiting cards printed in the colors of their Free-Day slips.

Weighty reasons were advanced in Soviet books and journals for the introduction of the uninterrupted week with its staggered Free Day. The main explanation was, in effect: "We in the Soviet Union have compara-

tively little machinery and yet such a large program to carry out. We cannot allow this valuable machinery and other equipment to stand idle even a few days in the month. We must use it all the time." The slogan therefore was: Use buildings and machinery 365 days a year, 24 hours each day, instead of the old basis of 299 days with seven or eight hours of work each day. The fuller the working year, the quicker you train the sorely needed artisans, mechanics, engineers and other experts, the fuller and quicker your progress. Socialist industrialization of vast Russia was, in brief, the chief reason for the new calendar. Joseph Stalin declared: " Given right organization of labor, given set responsibility of each person for a definite task, given firm detailing of certain groups of workers to certain machinery, given efficient organization of shifts equal to one another in their training and ability—given all these conditions, the uninterrupted week will lead to a great spurt in production and to an improvement in its quality, doing away with lack of personal interest in the work." Stalin said that, divorced from these necessary conditions, the new calendar led to indifference and irresponsibility, to careless handling of costly machinery, so that in many cases "lack of personal interest in the work entered the establishments as an unlawful companion of the uninterrupted week."

Cases of indifference and carelessness, if not of chaos, continued to be too numerous even after two years of the new calendar. The exhortations and punishments did not seem to improve the situation. Plainly, the uninterrupted week as introduced in 1929 did not work. The chief trouble appeared to be in the staggered Free Day, and most objections on this score came from the families rather than from any other organized groups. Wives and husbands, parents and children complained that each working member of the family seemed to have a Free Day different from that of all other members, and that in applying for a common day of rest there was too much red tape to overcome. Too, the 5-day week, with its four days of work and one day of rest, seemed too short and tense. Skilled mechanics said that machinery also needed rest and overhauling every once in a while, and that the staggered Free Day, with its continuous use of the equipment, gave no chance for such repairs. It was true that, prepared by years of anti-religious propaganda, the urban populace did not mind the abolition of Sunday as a holiday, religious or otherwise; and there were other features of the new calendar which met with general approval, but the shortness of the week and the staggered Free Day had to be adjusted.

And so a new reform came, this time to last not for two or three brief years but well into the present.

The newest Soviet calendar, instituted in 1932 and still in use at this writing, divides the year into 12 months as in the West, but the month has

five weeks of six days each. The days of the week have no names but numbers alone: the first day, the second day, the third day, and so on. The first days of the five weeks are the 1st of the month, the 7th, the 13th, the 19th and the 25th. The Free Day falls upon the 6th, 12th, 18th, 24th and 30th of each month. At least once there was a decree transferring the Free Day from the 30th of December to the 1st of January; it is difficult to say at this time whether this way of making a holiday of the New Year's Day is a permanent or temporary practice.

Whenever a month has 31 days, the extra day is a day off in some industries, but a working day in some others, with extra pay. Even this day off is not exactly an idle one. In some schools and factories it is devoted to military exercises, in others to instructive games. An American friend of mine, who studied law in a Moscow school, tells me that he and his Russian fellow-students always liked the 31st of the month because on that day they had make-believe trials to test their knowledge of Soviet laws. In February the week is either carried from the 24th of the month to the 6th of March or is made into an extra-short one by virtue of a holiday proclaimed for March 1. In either case the Soviet worker, employee or student loses or gains nothing, his loss or gain nullified by special arrangements calling for extra rest or extra work at other times.

With the names of the week's days gone from common usage, the Russians say, "I'll meet you on the 17th," instead of "I'll meet you on Tuesday." Americans living and working in Russia are in the habit of saying, "Meet you on Soviet Monday," meaning the day after the Free Day, which in Western countries may happen to be not Monday but any other day of the seven-day non-Soviet week.

The outstanding advantage of the calendar in use in the present-day Russia, as compared with the system prevailing between 1929 and 1932, is that the Free Day is not staggered, and families and friends are no longer inconvenienced. The Free Day, by and large, is the same for all. Some war-supply industries, also all the public services, such as telegraph, telephone, railroads, hospitals, power-houses, gas-works, water-supply and similar systems, continue to use the uninterrupted week, with the result that certain employees still have a staggered Free Day, but this is not a peculiar Russian trait—in the West, too, war-industries and public services operate on the basis of an uninterrupted week and staggered day of rest. A typical Soviet feature is, however, the fact that all the big stores in Russian cities are open on the Free Day, to give the populace a chance to shop around, but are closed on the day after the Free Day. (In the West, there is a striking parallel in the city of Paris where all the museums are kept open on Sunday and closed on Monday.)

The 5-day week, consisting of four days of work and one staggered Free Day, as introduced in 1929 and discarded in 1932, is still preserved

in a limited number of industries, where it is claimed to have proved its worth. Chemical and ore-smelting industries predominate in this category. The staggered Free Day has won out here mainly because the nature of the technological process demands continuous use of crucibles, smelters, furnaces, or what have you. Working shifts in such industries are scheduled in a way that guarantees the employees the same number of hours of work and rest as those prevailing in the industries of similar categories operating on the post-1932 6-day week (that is, a week consisting of five working days and one Free Day). Generally speaking, the Soviet working day is eight hours in the construction trades, also in road- and canal-building; seven hours in most other industries and offices; and six hours in occupations considered detrimental to health. Hours of work per 30-day month thus amount to 200, 175 and 150 for the three chief categories respectively. Because of the present war situation, the official Soviet prohibition of overtime work is allowed to be a dead law; in many cases, work is done not only on a weekday after the hours, but also on a Free Day. Such work is usually called not "overtime" but "special task."

There are very few general holidays set by Soviet law for the nation as a whole. January 22 is observed as a non-working day of mourning—the Soviet people dislike some foreigners' habit of calling it a holiday; it is in commemoration of the Bloody Sunday in January, 1905, when the Tsar's police and troops killed hundreds of workers marching toward a palace with a humble petition, as well as of the January day in 1924 when Lenin died. May 1 is, of course, an international workers' holiday, first conceived in America in the 1880's and now most zealously observed in the Soviet Union. November 7 and 8 are celebrated as the anniversary of the Bolshevik Revolution in 1917. The 1929 idea of some day creating special national and revolutionary holidays for the five days in the year that happen to be the 31st of the month has since been abandoned.

With the Free Day becoming largely the same for the urban population of the Soviet Union, the 1929 scheme of colored slips has also been given up. Its disappearance is so complete that an American who lived in Russia for three years in the middle 1930's, and was quite close to the Russians in their every-day life in homes and offices, evinced surprise when I asked him about the slip-system. He had never heard of it!

Equally forgotten is the proposal, briefly entertained in 1929-30, to invent new names of appropriate revolutionary sound for the days of the week. For a time it had seemed that at least one day would be named Lenin-den, that is, Lenin-day, but even that suggestion did not seem to take. And so there are no new names for the week's days in this year of 1940, while the old names for the days of the week, although not forgotten, are seldom used. You will see the old weekday names printed on newspaper mastheads, but in daily life, particularly in cities, they are mentioned so

infrequently that yet another American acquaintance of mine, an economist who spent years in Soviet Russia, and knows the language very well indeed, tells me that he did not bother to learn the Russian names of the days until he returned to the United States. "But why are they still used on the newspaper mastheads?" I asked the first American, the man with the record of three years' residence in Moscow. "I don't know," he laughed. "Maybe because somebody forgot to issue a special decree telling the editors to discontinue the practice." Seriously speaking, however, we agreed that it must have been because the old 7-day week is still used in the country districts, and the farmers know and follow the old names of the days.

It has been said that Soviet children do not at all know the names of the week's days. This is an exaggeration, to be sure. If anything, children and others have a sort of academic knowledge of it, since so much pre-revolutionary classic literature is reprinted by the Soviet publishing houses, to be used extensively in Soviet schools and homes, and Russia's old classics certainly contain frequent mention of old names of the week's days.

A commentary on the stubbornness of the Russian farm-folk, and the difficulty which the Kremlin has had in its constant endeavor to revolutionize village life, is in the fact that the old 7-day week has persisted in the countryside after all these years of the Soviet regime. Even the word, "Sunday," which in Russian also means "Resurrection" (voskresenie), has survived—not only in home-use but also in official documents. Thus, the Soviet election laws provide that for national voting a day should be set aside which combines the Free Day in the cities with a non-working day in the country, and the official explanation of the laws adds that by "non-working day" the Soviet Government means Sunday. In Moslem regions, such as Azerbaidzhan, Uzbekistan, and Tadzhikistan, the Soviet election law mentions Friday as the day of voting—Friday, which, is, of course, the old weekly holiday of religious Moslems.

Not that the Soviets did not try their best to eliminate the religious holiday as the day of rest. But when in 1929 and again in 1932 the Soviet authorities tried to institute the 5- and later 6-day week for the farming districts as well as the cities, the peasants blandly sabotaged the reform by taking off not only the Free Day each five or six days but also the good old Sunday every seven days. The resulting confusion and loss of valuable working time proved to be too much, and the peasants won out by regaining their traditional 7-day week, Sunday and all. One of my American friends of Soviet experience tells me that he was always reminded of a certain evening being Saturday evening if he happened to be traveling in the country: the roads, he relates, were full of peasant carts going to the nearest market-towns for the traditional Sunday of buying and selling.

Summing up, we see that the main calendar in today's Russia provides for a 6-day week, but that there are also two other systems in use—the old 7-day week and the 1929-32, 5-day week. Soviet officials, newspapermen and others whose work necessitates constant awareness of all three systems may not find the going too smooth, but to outsiders they extend calm assurances that the thing is simplicity itself, and that there is no confusion. A certain difficulty is admitted by those officials and other

citizens who have to deal either with foreign relations of the Soviet Union or historical research of their country. These men and women have to keep on their desks several calendars at once. But even these insist that no further change or simplification, tending toward the Westernization of the calendar, is necessary.

There is, of course, the fact that former Commissar for Foreign Affairs, Maxim Litvinoff, acted as *rapporteur* for the Transit Commission of the League of Nations in presenting that Commission's recommendations for calendar reform to the League Council in January, 1937. But the Soviet Russians insist that it was a purely mechanical occurrence, that it did not signify Moscow's advocacy of The World Calendar, that at best it may have represented Litvinoff's personal preference for the new idea from the West. And with Litvinoff's resignation from his post, many of his ideas of rapprochement with the West have been shelved for the time being at least.

The present Russian feeling of distrust of everything foreign and fear of the hostile West is not bound to last, we hope. In the past, each period of such distrust and separation was followed by an era of better feeling and cooperation. And each time Russia opens herself to the West the difference of calendars becomes irksome. It was to bring Russia closer to the West that Lenin in 1918 changed her calendar from the Julian to the Gregorian. A similar shift closer to the West and its up-to-date reform of the calendar is inevitable once more, when Russia again decides that her fear of the West was somewhat superfluous.

METHODIST CONSIDERATION

By THE REVEREND W. A. STANBURY

THE following resolution was presented to the General Conference of the Methodist Church at Atlantic City. It bore the signatures of some 20 or more delegates from various sections of the country.

> Whereas the annually shifting date for Easter causes unnecessary work for clergy and inconvenience for laity; and
>
> Whereas a stabilized date for this important Christian festival would be a real contribution to Church unity; and
>
> Whereas the College of Bishops of the Methodist Episcopal Church, South, in session on January 8, 1935, went on record as favoring the second Sunday in April as the fixed date for Easter; and
>
> Whereas the Universal Christian Council for Life and Work at its Council Meeting at Chamby, August 21-26, 1936, declared that studies and reports received from the Churches have shown that the stabilization of Easter would, if carried through, receive the support of the overwhelming majority of the Churches;
>
> Therefore, be it resolved, that the General Conference of the Methodist Church favors the second Sunday in April as the fixed date for Easter.
>
> NATHAN NEWBY, *Chairman;*
> ERNEST W. PETERSON, *Secretary.*

It was adopted by the Committee on Membership, Lay Activities, and Temporal Economy on May 3, 1940, and was referred by the General Conference to the Committee on Interdenominational Relations, a standing committee of the General Conference which will report to the session of 1944.

FAMILY OF TIME

By ELISABETH ACHELIS

President, The World Calendar Association

Text of a broadcast over Station WNYC, from the Town Hall Club, April 11, 1939

IN THE Declaration of Independence we are told that the pursuit of happiness is the inalienable right of man. What an amazing affirmative! And don't we experience a deep inner thrill at these words, that this goal of happiness may be yours and mine? And happiness means service, a giving and a sharing. For if we attempt to hold it to ourselves, we lose it. But there is another necessary quality to happiness which I do not think is sufficiently realized. It is *order*. And it is *order* that is fundamental in the new World Calendar and so will yield its share of happiness.

One of our foremost scientists and a Nobel prize winner, Dr. Robert A. Millikan, writing about our universe, tells us of the "extraordinary and unexpected orderliness and of the wondrous beauty and harmony that go with order" and that within this vast universe there exists "an interrelatedness, a unity and a oneness about the whole of nature." I think it is just this *order* of the universe and solar system that reveals the manner in which we should improve and perfect conditions. In the degree that we replace disorder with order and confusion with harmony we shall find ourselves in the same degree unhappy or happy. Order and happiness go hand in hand, and this is also true of the calendar.

At these Round Table Luncheons, where every Tuesday we come together to discuss vital, up-to-date subjects, we sometimes meet on four Tuesdays in a month and then again on five; we never know. Last November (1938), you may recall, there were five Tuesdays, the Christmas month had only four, while January had five Tuesdays, once more. But February, March and April, all in a row, had but four, while May, the closing month for our pleasurable luncheons, will have again five Tuesdays. Do you think this whimsical irregularity and disorder tends to make planning of programs a happy job for our chairman, or the balancing of the monthly budget easy? I think you will agree it does not. If we have a calendar wherein there is *order,* in which the first month in every quarter has five Tuesdays and the others four, inconvenience of planning and difficulty of adjustment would disappear. And of course every year would be constant and comparable. In the new World Calendar of 12 months and equal quarters, upon which we are discoursing today, order makes all things easy. And here we should not fall into the error of thinking that order means monotony. It does not. Order is a harmonious arrangement whereby all

the various parts in any system operate together without friction. Order is not a strict regimentation, for only in order does a magnificent freedom exist.

There is one field of activity that appreciates this fine sense of order and that is the radio. Were it not for this, radio programs could not run so smoothly and easily as they do. And, then, think of the variety of programs that we can listen to because of this order. We are becoming an orderly people in our sense of clock-time. This was notably apparent last September (1938), the time of the Munich Conference, when the entire world stood by as one audience through the power and influence of the radio. Had world-wide Standard Time not been adopted in 1884, whereby the world became united under one common and orderly system of clock-time, such ease in assembling an audience at an appointed hour for radio communication would have been impossible. Standard Time proved the forerunner of today's convenient time-keeping in regard to days, hours, minutes, and seconds. And what has been done for clock-time, we are now proposing to do for calendar-time.

We have only to study the marvelous solar system in the universe, wherein nine planets move in their particular orbit around the Sun in perfect equanimity and accord, where all are different yet all unite in forming a happy system of oneness. Each planet respects its own right, its own freedom, within its own path. Each is lord and master in its own orbit. Yet they all influence each other and unite in forming one happy solar system—a system, the most harmonious and stable known to us here on earth.

But alas, our present calendar does not possess these qualities. The days shift in the calendar in a most confusing way; the week constantly breaks awkwardly into the months; months are hopeless in their irregularities and the quarters are flagrantly unequal in length. No order exists in the calendar of today—it is wayward, irregular and difficult. I think, then, you will agree that a new and improved calendar must have law and order as its keynote, if it is to emulate the solar system. By this I mean the calendar must keep in step with the Sun, which gives us our four seasons.

Fortunately, for us, past reformers of the calendar have worked so well in establishing this conformity with the seasons, that our calendar today works in happy partnership with nature's law. Our four-seasonal 12-month year calls for no astronomical adjustment nor is any proposed in The World Calendar. The need for improvement is essentially social, civil and economic. It has to do with our every-day living—in our homes, in our offices, in our professions. The arrangement *within* the calendar-year calls for improvement.

In the business world, quite frequently, pay envelopes or salaries,

instead of being paid monthly, as are bills, are paid semi-monthly on the 15th and the last day of the month. It is very simple to plan your budget for the first 15 days, but what about the remaining 15 days? There is February. That is easy. For there are only 13 days left in the second half of the month so that you have a nice bonus by which you can give yourself a little bit of leeway in your expenditures. In the four months, April, June, September and November, wherein you have 30 days, your pay envelope will be as good for the last 15 days as it was for the first. There is no difference. But, when it comes to the longer months, January, March, May, July, August, October and December, seven months not coming at regular intervals either, you have to stretch your purse and plan more carefully your expenditures in the last half of these seven months because of the one extra day.

And should you be given your pay envelope at the end of every week, as many are, you are equally discomforted as the weeks begin and end the months in a most haphazard manner. And even quarterly-year payments do not help you, because these are sometimes short and sometimes long. Now all this disorder, irregularity and inequality cause more unease and unhappiness than we are conscious of. We might well quote Anna Hempstead Branch: "Order is a lovely thing; on disarray it lays its wing, teaching simplicity to sing."

We have just celebrated a joyous Easter (April 9, 1939) and some of us still have our children home from school and college. How has this vacation affected your family? Let me cite what happened in mine. One nephew came home the 10th of March to return the 30th; another nephew, the 29th of March to return the 13th of April, whereas my niece arrived home March 22, also to return on the 13th, so that only two could enjoy Easter at home. Public and high schools in New York City began their Easter vacations with Good Friday, April 7, and end their vacation on April 17, a week from Easter Monday. What a hodge-podge of vacations! Is it surprising that families despair when vacation days arrive?*

Two holidays regulate vacations. The first is Labor Day. As to its observance on the first Monday in September, vacations come early or late, and schools and colleges open and close their educational year early or late. The other is the great variety of days on which Easter meanders within a period of 35 days—longer than one month. Easter is the great migrant of feast-days.

The stabilization of Easter, then, on a definite date would be a desirable feature in our civil calendar but, being strictly religious, this rests entirely with religious authorities. Many churches have already spoken in favor of a fixed Easter date in a new and perpetual calendar, but obviously, a fixed

*EDITOR'S NOTE: This year the early Easter—March 24—caused even greater inconvenience and confusion.

Easter would be impossible within our changeable calendar of today. Only in a new perpetual calendar, such as The World Calendar, can Easter be fixed on its day and date. It is agreed among churches that no dogmatic difficulty exists in bringing about stability in our confused Easter.

Now we women just love our anniversaries, be it our wedding anniversaries or our husbands' and children's birth-dates. Your boy or girl born on Tuesday, April 11 (let us say), can never know the weekday unless you, mothers, tell them. And how many mothers know?

How many here know the weekday on which they were born? There will be some of you who will say: "What does it matter whether I know the actual weekday or not? It is fun to celebrate birthdays on different days of the week; or, perhaps, forget them all together." That may be true, but can we ever be accurate in observing our birthdays or wedding anniversaries? Strange, is it not, that in our concern to observe the date, month and year we should be so neglectful in remembering the day of the week. As a matter of fact your birth*day* really is denied you, for you can actually possess only a birth-*date* under the present calendar. And so the weekday has ever been the Cinderella in recording events!

When in 321 A.D. Constantine the Great introduced the seven-day week into our civil calendar, he never realized that with the adoption of the week, the calendar would lose its previous stability and order. For 52 weeks of seven days are always short one day in our 365-day year. To keep our calendar accurate with the cycle of seasons, one day must always be borrowed from the following week at the close of every year. It is this borrowed day that is constantly throwing the calendar out of its smoothly running gear. And chronic borrowing always does that. Shakespeare tells us: "neither a lender nor a borrower be." And this is not only true in life, but in the recording of life as well.

Whenever we celebrate our great Independence Day, founded on the inalienable right to the pursuit of happiness, we can only record the date, month, and year. Why should the day of the week have been so excluded, and be the forgotten time-unit in all our anniversaries? In this new World Calendar, anniversaries of whatever kind can be easily recorded and remembered in their four-fold aspect—the day, month, date and year.

But you will naturally ask how can these benefits be achieved—in our business world, school vacations, anniversaries, and many others too numerous to mention in my allotted time? And will it not cause a great deal of confusion when the change is made from the old to the new calendar? Not at all. It is most easy. Whenever a New Year's Eve or a New Year's Day falls on a *Sunday* in the old calendar we can slip quietly into the new calendar without any fuss. The necessary changes lie only within six months—six months between February 28 and September 1. The rest of the year would be exactly the same as in the calendar we now use.

As for the changes, they consist in adding or dropping a day or two at the end of certain months. Should your birthday be March 31, since The World Calendar gives 30 days to March, it would be celebrated either March 30 or April 1. It is an interesting fact that as early as 1236, King Henry III of England decreed a law at Westminster that reads: "the day increasing in the leap year shall be taken and reckoned on the same month wherein it groweth, and that day, and the day next going before shall be accounted for one day." Quaint language. King Henry meant that one born on leap-year day should have a legal birthday on February 28, in all except leap years. I might suggest that all those born March 31, May 31 and August 31—the changed days necessary to make the equable adjustment—can observe their birthdays as suggested by the English King, on the day previous, namely the 30th day of the month. Then they will have the added satisfaction in knowing that they are contributing to law and order.

A plan of the new World Calendar of 12 months which lieth so solidly on-the-square, wherein each quarter is like all the other quarters, is before you. Each quarter consists of one long month followed by two shorter ones; the long month has 31 days, the two short months 30 days each. This gives 91 days to each quarter, all quarters being equal. Then every quarter contains 13 weeks or three months, and every month has 26 *weekdays* besides the Sundays. Each quarter begins with a Sunday and ends on a Saturday. Here we have perfect order without sacrificing that pleasing variety within each quarter—a variety which gives life and zest to the calendar.

Now you will rightly tell me that this only totals 364 days. The indispensable 365th day, necessary to keep the year astronomically correct, is called Year-End Day. It is placed, as the name implies, after the last day of December, which in The World Calendar is December 30. It can be called either December 31 or December Y, and is reckoned as a second or twin Saturday. This should not seem incongruous, having two Saturdays in succession, since all travelers who cross the International Date-Line experience just this; they must repeat one whole day when they cross this magical line in an easterly direction. The *gift* of a Year-End Day is recommended as a world-holiday, dedicated to the peace and amity of nations.

As for leap year, it follows a similar plan, by placing the Leap-Year Day in the middle of the year. This day comes after the completed sixth month, and is tabulated June 31 or June L. Like Year-End Day it, too, is a second or double Saturday, and another world-holiday. Thus order, balance and equality are accomplished.

That is all there is to the new calendar. We get so much for so little change. It is balanced and simple. And to illustrate what order and harmony will do to our time-system, you will note that all the various time-units—the day, week, month, season or quarter—these four, all come together to round out the quarter-year on one and the same day. No difficult figuring is needed to effect this.

We can well imagine Father Time's joy in welcoming his newly found happy family, wherein all previous friction has been removed. His day-child, instead of running riotously among the months, has found its rightful place. It knows at long last where it belongs, with all its futile wanderings ended. The week has been cured of its borrowing habit and is happy in its ordered location. It has found its freedom within this orderly arrangement, happy that at the conclusion of every 13th week it

can join in reunion with the rest of its family of Time. The week no longer disturbs the equanimity and order of the calendar. The mature month, too, has become firmly established having regularly 26 weekdays coming on the same dates. The indignity of being associated with a nursery rhyme has been eliminated. And the seasonal quarters complete this happy family of Time. With the joining of four such units, the calendar is now a joyous community, wherein dwell order, stability, harmony and equality without end. It now parallels the solar system.

But what of its adoption? Fourteen governments have officially approved it, and were the United States to sanction it there is no doubt but that we all would be using it in a very short time. To voice your opinion then, and herein I speak also to my invisible audience, to work within your clubs and organizations, so that they, too, will officially approve this calendar, is the strongest way to show our Government that we the people really want an ordered calendar of time.

Its operation could be made effective on New Year's Eve, December 31, 1944, a Sunday. Considering this day as the new Year-End Day on an extra Saturday, The World Calendar would begin with Sunday, January 1, 1945. The following day, Monday, January 2, would then start the working week; as it would no longer be necessary to observe Monday as a holiday, because the Year-End Day just before the Sunday is a world-holiday. Every new year would begin with Sunday, January 1, and every old year would end with the Year-End Day on a double or twin Saturday. To accomplish this it is essential that two years before or possibly one, by 1942 or 1943, international sanction must be gained for making it operative at the end of 1944. There is, therefore, no time to be lost. Otherwise the next opportunity does not occur until January 1, 1950, and who would wish to delay this ordered calendar six more years?

It has been said that other vital needs exist more important than that of an ordered calendar. But I ask you: "How can we progress if we will not even improve our time-system which influences every phase of our life?" How absurd to think that our 2000-year-old calendar is adequate for our day and age! We gave up candlelight when electricity was offered; we gave up sailing vessels, clippers and buggies when super-steamers, streamlined trains, automobiles and airplanes came into use. Let us then give up our obsolete calendar and adopt the best we know, The World Calendar, for the recording, measuring and use of our time.

This movement should be easily adopted by international agreement as it lies beyond the interests of any one nation or race. It does not call for concessions by any one country at the expense of any other. This is because time, being universal, belongs to all alike. Here at least, in these troubled times, is a safe, equable movement in which every nation can unite. International agreement on a revised calendar would prove, even to the doubters, that nations *can* agree and cooperate. And who knows but that the nations themselves, when they find they have agreed on this, may not see the wisdom in agreeing on other measures as well. If we all do our part a new World Calendar is a definite step toward world-wide harmony and understanding.

TIME MARCHES ON

By GEORGE KENT

(From *The Family Circle*, December 30, 1938)

SOME day now, the world may have a new calendar. The one tacked on the wall may be good enough for some of us, but there are men and women who believe the world could be made a better place to live in, if the calendar were revised. And now there is some possibility that they are going to have their way.

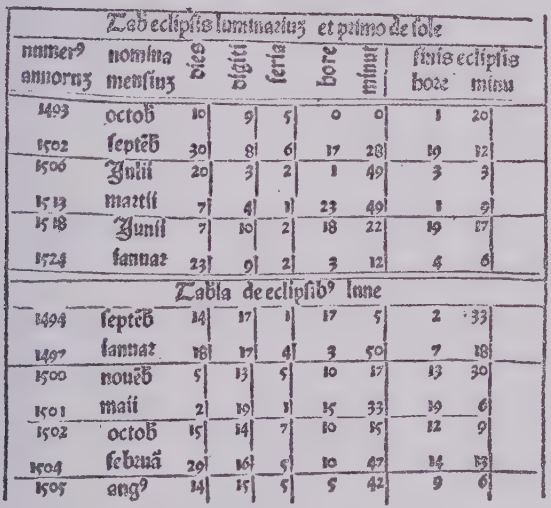
If the change goes through, it will be the first alteration of the Western calendar in 357 years. The present one has outlived a hundred wars and all the great scientific and political revolutions. Time has marched on, but the calendar which records it has stood still.

We may take this checkerboard of days for granted, but we are all affected by it, because dates are intimate things—in more ways than one. Our birthday, our graduation day, our marriage day—these are signalized by marks on the calendar. All our sentimental anniversaries are there, and so, too, are the dates of our triumphs, our defeats, and our death. The story of the nation is a tale told by a calendar. Although our present calendar has gone unchanged for a good many years, its early history was one of constant evolution and amendment. In the old Roman calendars, for example, March used to be the first month of the year and February was the last, which explains how it happened to become the short, stepchild month. Julius Caesar rearranged the length of the months in a new calendar, which for a time was a phenomenon of accuracy.

Caesar made one small mistake, however, but considering that he made it about 2,000 years ago, it is surprising only that he didn't make more. He figured that it takes the earth 365 days and 6 hours to go around the sun, and on that calculation he based his year. The true solar year contains 365 days, 5 hours, 48 minutes, 46 seconds. The Julian calendar was off by only 11 minutes, 14 seconds, which isn't much when spread out over a year. But the error added up, and at the end of 1,000 years, these annual shortages of minutes totaled about seven days, and at the end of 1,500 years, about 10 days.

Now 10 days is time in any man's year. A calendar must work with the sun or it is no good; it must do it so accurately that June 21 will actually come out the longest day, and December 21 the shortest. Otherwise, the equinoxes don't jibe with the dates, and the seasons come along in the wrong months. And so the Julian calendar was like a clock which was running slow, and if it had been permitted to go on without adjustment, winter eventually would have retrograded to July, and so on.

In 1577, Pope Gregory XIII decided to do something about it. He sat down with the scholars, and after five years of labor produced the chart of days, weeks, and months which we use today. It operates with an annual error of only 26 seconds, which will add up to a full day only after some 3300 years have elapsed. He put it into effect by the simple process of skipping the 10 days; in other words, he turned the clock forward, and then it



Tab eclipſis luminariuz et primo de ſole

numer9 annorum	nomina menſium	dies	digiti	ſcrupula	hore	minute	finis eclipſis hore	minu
1493	octob	10	9	5	0	0	1	20
1502	ſeptēb	30	8	6	17	28	19	12
1506	Julii	20	3	2	1	49	3	3
1513	martii	7	4	1	23	49	1	9
1518	Junii	7	10	2	18	22	19	17
1524	ianuar	23	9	2	3	12	4	6

Tabla de eclipſib9 lune

1494	ſeptēb	14	17	1	17	5	2	33
1497	ianuar	18	17	4	3	50	7	18
1500	nouēb	5	13	5	10	17	13	30
1501	maii	2	19	1	15	33	19	6
1502	octob	15	14	7	10	15	12	9
1504	februā	29	16	5	10	47	14	13
1505	aug9	14	15	5	5	42	9	6

A page from Zacuta's Perpetual Almanac, the same edition used by Columbus in 1492. He also used it—and indeed this very page, which is a table of solar and lunar eclipses—in 1504. It was on his third voyage to America, and he was in the West Indies. Some hostile Indians had refused him food and supplies, and he said that unless they changed their mind he'd darken the moon. The Indians held out until they saw the moon grow dark; then they became so frightened that they brought Columbus everything he'd asked for. Reading from left to right across the table on the line starting with 1504 (the year), the "februa" and 29 means February 29th; the 16 and 5 relate to the degree of totality (in this case the earth's shadow was one and a quarter times the size of the moon); the 10 and 47 stand for 10:47 o'clock (the starting time of the eclipse); and the 14 and 13 stand for 13 minutes after the 14th hour (the end of the eclipse).

was once more on time. Incidentally, this change is vastly more radical than anything contemplated by our modern calendar reformers.

The Catholic countries put the new calendar into effect at once, but England and other predominantly Protestant countries continued to reckon by the Julian chart. In some places, both calendars were in effect. The result was a glorious mix-up, which was not resolved until Britain gave in and at long last adopted the Gregorian calendar, our present-day one.

George Washington was born before England took this step, so that, on paper, he lost 11 days out of his life. We celebrate his birthday on February 22, but in the Washington family Bible it is written that George was born on "ye 11th day of February"—according to the Julian calendar.

The chief defect in our calendar is its irregularity. We shouldn't have to memorize verses in order to know how many days there are in a month, nor should we have to make elaborate calculations to discover what day our birthday will fall on in 1948. In Yugoslavia, where more than one calendar is used (one being the Moslem calendar, described later), the peasants say, "A faulty clock may make you miss your train and lose your temper, but an erratic calendar will make you lose your harvest and with it your life's chance."

The famous little verse which we all know and recite to get the number of days in a month is older than the Gregorian calendar. It first appeared in Richard Grafton's almanac in 1572 under the title "A Rvle to Knowe How Many Days Euery Moneth in the Yere Hath." It ran:

Thirty dayes hath Nouember,
Aprill, Iune & September.
February hath xxviij alone,
And all the rest haue xxxi.

The jingle has many variations, one of the most interesting being the Quaker version used in Chester County, Pennsylvania:

Fourth, eleventh, ninth, and sixth,
Thirty days to each affix;
Every other thirty-one,
Except the second month alone.

In South America, they get the same results by clenching the fist and counting the months off on the knuckles and the spaces between them. Beginning with the knuckle on the index finger, those months having 31 fall on a knuckle, those 30 or less on a depression. July is on the little finger; August, like January, is on the knuckle of the index finger.

A similar method is used in France. It consists of counting the months on digits of both hands (with the exception of the thumbs) and the spaces between, starting with the little finger of the left hand. July falls on the left index finger, and August on the index finger of the right hand.

Many schemes have been put forward for improving the Gregorian calendar, and all are designed to regularize the number of days in the months and to fix annual holidays, particularly Easter. The late George Eastman, of camera fame, aroused interest in a calendar of 13 months, each containing 28 days. The 13th month was to go by the name of Sol.

Employers who paid their help by the month did not approve, because it meant an extra pay-day each year. Some persons did not become enthusiastic because they think 13 is unlucky and because we are sentimental about month names, especially when they mark events of importance to us as individuals. A June bride would protest violently against being sud-

denly transferred to Sol to become a creature without romance—a Sol bride. And so on.

At this moment, the 13-month calendar seems to have been definitely shelved, although there are a number of industrial establishments in northern New York which operate by its system of reckoning.

The most generally favored proposal and the one which has some likelihood of adoption is the so-called World Calendar. It is simple, practical, and it could be put into effect without disrupting our lives. Six changes do the trick. February grows to 30 days; April to 31; March, May, August, and December each lose a day. Here is how it will look:

Jan. 31	Apr. 31	July 31	Oct. 31
Feb. 30	May 30	Aug. 30	Nov. 30
Mar. 30	June 30	Sept. 30	Dec. 30

It is, you will observe, symmetrical, each quarter being like every other one. Each contains 91 days, and, what is more important, each begins on a Sunday and ends on a Saturday. The same is true of the year and the half-year. And not for one year—but for all time.

In this "changeless" calendar, the holidays will also perforce be nailed down. Lincoln's Birthday would always fall on a Sunday; Memorial Day on a Thursday; and so on. When we celebrate our birthdays now, we simply observe the day of the month. Persons born under The World Calendar would celebrate the weekday as well. For others, their birthdays would no longer shift from year to year. This, of course, would be true of all anniversaries, too.

The rigidity of the calendar is accomplished by the little trick of stabilizing the year in four equal quarters of 91 days each for a total of 364 days. This leaves one day to be accounted for—the odd one which has upset a thousand calendars—and it is handled by adding it to the year without giving it either a number or a name.* It is simply a 24-hour period which might be observed as a festive occasion, but not permitted to upset the orderly rotation of the days. And so the calendar would remain stationary, and the years would begin as many think they should—on a Sunday.

For the record, this day, which would follow December 30 in The World Calendar, would be known as December Y. It has been suggested that it be called Year-End Day, and some have proposed making it an international holiday devoted to the cause of peace.

In leap year, the performance would be repeated, except that the extra, or intercalary, day would be inserted between June 30 and July 1. It will also be a holiday, and it would appear as June L (L for Leap).

For more than a hundred years, or ever since the Abbé Mastrofini thought of the idea, people have been fighting for this rational calendar. In

*EDITOR'S NOTE: It is called Year-End Day and placed on an extra Saturday, a world holiday, dated December Y or 31.

recent years, 30 calendar reform organizations in 28 countries, headed by the brilliant Elisabeth Achelis, President of the World Calendar Association, have carried the battle to the League of Nations.

Two years ago, the Chilean delegate to Geneva suggested that the proposal for calendar reform be submitted to the different nations for comment. This was done, and of the replies that have come in, 14 countries have gone on record as enthusiastically in favor of the proposal. Twenty-five were noncommittal in the best diplomatic tradition. Six made critical suggestions indicating opposition.

The next move is to summon representatives of the various countries to sit in an international convention which will draw up a treaty on the subject. There is reason to believe that the initiative may come from the United States. Dave Hennen Morris, former American Ambassador to Belgium, recently said, "The time is rapidly approaching for the United States Government, through its President, to appoint a special committee for the express purpose of studying and reporting officially on The World Calendar, with a clear exposition of its influence upon civil life. Upon the committee's findings would then be based the recommendation to call an international meeting."

Businessmen generally favor the idea. The International Chamber of Commerce and the American Statistical Association, as well as other groups, have gone on record as approving calendar reform. Louis J. Taber, Master of the National Grange, has applauded the proposal, and William Green, President of the American Federation of Labor, has favored it. Their approval is based upon the fact that the symmetrical calendar of equal quarters would make the conduct of business simpler and more efficient. Accounting would be easier; statistical comparisons of year-to-year production and profit figures would be more accurate; and agriculture, industry, and labor would all gain in various ways.

An understandable objection to The World Calendar comes from the sects which observe the Sabbath on Saturday—namely, the Seventh Day Adventists, Seventh Day Baptists, Jews, and others. They feel that the sequence of days should not be disturbed and oppose the reform on the ground that the Year-End Day would do precisely that—destroy the orderly stream of days, flowing since Biblical times.

But probably the strongest type of active objection to adopting The World Calendar is exemplified by a statement made to me recently by a member of the United States Weather Bureau. "It would cost us at least $100,000 to change our past records so that they would be on a uniform basis with our future records,"* he said. "If we had that amount of extra money to spend, I'd rather see it used to establish new weather stations." Businesses of some kinds would be similarly affected. And then of course there are inertia and lack of interest—two major opponents (and all the harder to fight because of their passivity) of zealous World Calendar advocates.

Regardless of how we name the days and months or how we divide the periods, a calendar, in the final analysis, is simply a record of two facts: the time it takes the earth to rotate on its axis, which is a day, and the time it takes for the earth to revolve around the sun, which is a year. These are realities which do not change, but the ways of tallying them are as numerous as the races of men. There have been thousands upon thousands of systems, ranging from childishly crude calendars to incredibly complex ones. And even today there are several hundred calendars in use besides the Gregorian calendar. Here in the United States, there are at least 20 which are used by foreign residents, chief among them being the Moslem and Jewish calendars.

They are all pretty much the same, however, and if we wanted a calendar which is fundamentally different, we would have to go to another planet. For example, on Mercury, which rushes around the sun more than four times as fast as our earth, we would have an 88-day year. On Venus, the year would be 225 days, and on Mars the year would be 687 days.

*EDITOR'S NOTE: This objection seems to be overestimated since most statisticians consulted agree the change from the Gregorian to The World Calendar is so slight that it would not be necessary to change past records.

Jupiter is even slower. A resident there would have seven moons to look at and one of his years would be equivalent to almost 12 of ours. The year on Saturn is about 30 of our years; on Uranus about 84; on Neptune almost 165; and a human being who lived a year on Pluto would have lived what corresponds to 248 years on earth.

The oldest calendar in use is the Chinese, which goes back more than 42 centuries. The Western calendar was officially adopted in 1912, but the majority of the Chinese people still go by the old system of reckoning. This is a calendar in which our week has no place. Instead, the month is divided into three periods of ten days each. One system, in use over 4,000 years ago and supposedly the invention of Ta Nao, Minister of Huang Ti, the first great emperor of China, counted the days in cycles of 60, this corresponding roughly to a six-month year of 60-day months. This was modified and now the unreformed Chinese calendar consists of 354 days, and is made to balance by the insertion of two extra months every five years. The month names according to one Chinese calendar are picturesque: Spring Showers, Corn Rain, Summer Rain, Moderate Heat, et cetera.

The first fixed date in history is 4236 B.C., which is the date established by the first of the ancient Egyptian calendars. The Hebrew calendar, which still is used in Palestine and Jewish communities throughout the world, is a melange of the Egyptian and the Babylonian calendars, with refinements. It goes back to the Biblical creation of the world, and the coming year, by its reckoning, is not 1939 but 5699.

The Hebrew calendar has 12 variable months, consisting of 353, 354, or 355 days. To bring it in accord with the solar calendar, seven months have to be intercalated during each 19-year period. In describing the Hebrew calendar, Rabbi Weitz said:

"The Jewish calendar, unlike the Gregorian, is based on days reckoned from evening to evening. The day begins at dusk with the appearance in the sky of three stars of the second magnitude. At that moment commence the Sabbaths, festivals, feasts, and fasts. The Hebrew day is divided into 24 equal hours. The night is divided into the four *watches*, as suggested in Biblical and Talmudic readings. The hour contains 24 *onot*. Each *onot* is divided into 24 *ittot* and each *ittot* into 24 *regaim* or seconds."

The old calendars were moon calendars. That is, they measured time in terms of how long it took the moon to travel around the earth. Anybody can determine that, for it simply means watching for the new moon and then counting the days until the next new moon. All primitive calendars were made this way. The Chinese, Hebrew, and Moslem calendars are all lunar, with devices for correcting the year.

Perhaps the best example of the use of moon calendars is provided by the desert Arabs. They depend entirely on observation of the new moon, so they do not know in advance whether a month will be 29 or 30 days in length. At sunset of the 29th day, they watch closely in the western sky for the first slender crescent. If it appears, the new month begins at once; if not, it begins the following day. Which reminds me of a story which shows that even in the calendar there may be a tang of adventure.

One day Jotham Johnson, of the University of Pennsylvania Museum, while crossing the Syrian Desert, beheld a troop of wild horsemen galloping down upon him and his party. All hands took firm hold of their rifles and prepared to make a stand.

The riders, however, had not come to rob or kill. All they wanted was a little calendar information. The night before had been cloudy and they clamored to be told whether the new moon had been seen at Deir, the town Johnson had come from. If it had, then Ramadan, the month of fasting, was over. If not, they would be obliged to stick it out for another 24 hours.

American Indians called the month "a moon," which is fairly accurate, inasmuch as its cycle comes to about 29½ days. Each moon has a name, and each tribe had different moon names. To give one example, the Ojibways' year ran as follows: Cold Moon, Snow Moon, Worm Moon, Moon of Plants, Moon of Flowers, Hot Moon, Buck Moon, Sturgeon Moon, Corn Moon, Traveling Moon, Beaver Moon, and Hunting Moon.

In the South Seas, the Tonga Islanders name their moons in terms connected with the yams they grow, their principal crop: Little Yams, Yams with Small Protuberances, Early Rain, Late Rain, Putting Forth Living Shoots, Dead Shoots, Laying

Earth, and so on. Ancient Japanese month-names included Awakening of Insects, and Grain in the Ear.

The calendar has been called the clock of the years and it is a name well chosen, because along with the observation of the moon and the sun came a skill in making devices which would measure smaller divisions of time—the minutes and the hours. What is believed to have been the first clock is a sun-dial which was found in Egypt and which is now to be seen in the British Museum. This is a horizontal wooden bar with an upright at one end. The upright throws a shadow which moves along notches.

Old as this is, it is not as ancient as the earliest physical device for recording the passage of days. The first physical calendar was found in the cell of an Amorite monk in Palestine 27 centuries ago. It was a board with holes in it, and the days were tallied by moving a stick from hole to hole.

The most startling of the old calendars is the Aztec's 24-ton calendar stone in Mexico. A second great stone was discovered in Mexico that is easily the most gruesome relic now in the possession of man. In the center of this great stone, which was used as a sacrificial altar, is a hole six inches deep and 18 inches in diameter. The polished surface is covered with symbols tracing the movement of the days and months and years.

In the sacrificial rites, the victim, bound hand and foot, was stretched upon the stone and held still by five priests. A sixth, wielding a razor-sharp knife made of volcanic crystal, cut out the victim's heart and dropped it into the hole. The average number of persons annually sacrificed was 20,000. But on the occasion of the dedication of the temple, several thousand men, women, and children were slaughtered in a week.

Farther south in Mexico and in Guatemala lived the Mayas, a remarkable people, and their calendar is one of the miracles of all ancient civilizations. Not only did they measure time by the sun and the moon; they also computed it by Mars, Venus, and other planets. Their year had 18 months of 20 days each, which came to 360 days. To compensate, they added on five days, a system which oddly enough was exactly the same as that worked out by the Egyptians, 10,000 miles away. The Mayas also stored up their leap days until there were 13, which made a week, according to their calendar. And so every 52d year there was an extra week.

The history of the calendar, it can be seen, is a fascinating one which marks a people and reflects their life. The proposal to revise the Gregorian calendar is in keeping with this thought, for we live in an age of efficiency that demands—and should have—a calendar which marches from month to month a trifle less temperamentally.

The ideal moment for making the shift to The World Calendar would be January 1, 1939, which falls on a Sunday. But that is far too short notice for the entire family of nations to act on the plan—and this is one act which one government cannot do alone. Almost equally good as a date for beginning the reform would be a year from now, because it would be possible to use December 31, 1939, which not only falls on a Sunday but which also would be eliminated in any case from the new calendar, as the first day of the new year.

If the reform fails to go through by the middle of 1939, it will best be put off until 1950, the next year in which January 1 falls on a Sunday.*

*EDITOR'S NOTE: The World Calendar can be placed in operation on the last day of 1944. December 30 in that year falls on a Saturday as it does in The World Calendar. The next day, December 31, would be considered as Year-End Day, an extra Saturday World Holiday. The following day, Sunday, January 1, 1945, would then be the first day of The World Calendar.

CHANGE IN MEMORIAL DAY

By CHARLES C. SUTTER

Director, The World Calendar Association

OBSERVANCE of Memorial Day this year on Thursday, May 30, calls attention to one of the many compelling arguments in favor of an improved calendar. The holiday this year cuts awkwardly into the work-week. Under the perpetual World Calendar year of 12 months and equal quarters, Memorial Day could be stabilized by advancing it to Monday, May 27, giving a welcome three-day week-end. Memorial Day will not occur on a Monday until 1949. A three-day week-end holiday would have obvious benefits for industry and labor alike and would be equally welcomed by families as well as by resorts and travel agencies.

There is nothing sacred about the date May 30, nor was there any reason for placing it on this particular day. The formal observance of Memorial Day, or Decoration Day, as it was popularly called for many years, dates from 1868. The graves of the soldiers who died in the Civil War had been decorated with flowers before that year, especially in the South. For example, the women of Columbus, Mississippi, laid flowers on the graves of both Union and Confederate dead in 1863. Mrs. Sue Landon Vaughn, a descendant of John Adams, the second President, on April 26, 1865, led a few women to the cemetery in Vicksburg and decorated the soldiers' graves there. And in May of the same year some women in Winchester, Virginia, formed the Stonewall Jackson Memorial Association in honor of General Turner Ashby, who was killed in a skirmish at Harrisonburg in June, 1862. On June 6, 1865, they went to the Confederate Cemetery in Winchester, said to be the first cemetery planned especially for the soldier dead in the South, and decorated the graves with flowers.

Adjutant General Chipman of the Grand Army of the Republic, the organization of Union veterans, early in May, 1865, suggested to General John A. Logan, the commander-in-chief, that arrangements be made for the organization to decorate the graves of the Union soldiers on a uniform date throughout the country. Approving of the plan, General Logan issued a general order to all the Grand Army posts—part of which follows:

"The thirtieth day of May, 1868, is designated for the purpose of strewing with flowers or otherwise decorating the graves of comrades who died in defense of their country during the late rebellion, and whose bodies now lie in almost every city, village and hamlet churchyard in the land. In this observance no form of ceremony is prescribed, but posts and comrades will in their own way arrange such fitting services and testimonials of respect as circumstances may permit. . . ."

Memorial Day on May 30 was primarily observed in the Northern

States. Rhode Island made it a legal holiday in 1874, Vermont in 1876 and New Hampshire in 1877. It is now a legal holiday in all the States and Territories save Alabama, Florida, Georgia, Louisiana, Mississippi, North Carolina and South Carolina. In Virginia, May 30 is observed as a Confederate Memorial Day. June 3 (the birthday of Jefferson Davis) is observed as Confederate Memorial Day in Louisiana and Tennessee (which also observes May 30 as Decoration Day); April 26, in Alabama, Florida, Georgia and Mississippi; and May 10, in North Carolina and South Carolina.

For some time there has been a growing feeling particularly in the Southern States that Memorial Day no longer represents a day to honor soldiers who died in the Civil War, but that it now belongs to the dead of all wars and an effort should be made to observe Memorial Day nationally on the same day. President Roosevelt in the course of his address on the battlefield of Gettysburg in 1934 voiced this sentiment when he said:

"On these hills of Gettysburg two brave armies of Americans met in combat. Not far from here in a valley likewise consecrated to American valor, a ragged Continental army survived a bitter Winter to keep alive the expiring hope of a new Nation; and near to the battlefield and that valley stands the invincible city where the Declaration of Independence was born and the Constitution of the United States was written by the fathers. Surely, all this is holy ground. It was in Philadelphia, too, that Washington spoke his solemn, tender, wise words of farewell—a farewell not alone to his generation but to the generation of those who laid down their lives here and to our generation and to the America of tomorrow. Perhaps if our fathers and grandfathers had truly heeded those words we should have had no family quarrels, no battle of Gettysburg, no Appomattox. As a Virginian, President Washington had a natural pride in Virginia; but as an American, in his stately phrase, 'The name of American, which belongs to you in your national capacity, must always exalt the just pride of patriotism, more than any appellation derived from local discrimination.' . . . It was an inspired prophet of the South who said: 'My brethren, if we know one another, we will love one another.' The tragedy of the Nation was that the people did not know one another because they had not the necessary means of visiting one another. Two subsequent wars, both with foreign nations, measurably allayed and softened the ancient passions. It has been left to us of this generation to see the healing made permanent. We are all brothers now in a new understanding."

Today more and more the nation is united in the observance of this important day—a day no longer considered merely as one of honor for fallen defenders of the Republic. It is increasingly being dedicated to world peace and order that "these dead shall not have died in vain, that this nation under God shall have a new birth of freedom, and that government of the people, by the people, for the people, shall not perish from the earth."

Under The World Calendar, Memorial Day stabilized on May 27 would serve as a beginning of the vacation period. A three-day week-end holiday would be most welcome, coming between two months that have just this one holiday.

SOME POPULAR MISCONCEPTIONS

By E. G. Hogg, F.R.A.S.

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(From the *Journal of the New Zealand Astronomical Society*, May, 1939)

WE ARE all liable to make mistakes on matters connected with the calendar; it is a difficult subject and we may well expect to find that in dealing with it writers have occasionally expressed themselves erroneously when they should have known better, and that many popular ideas thereon are quite wrong.

The American professor who doubted if all his colleagues were quite sound on the question of the occurrence of leap year was possibly somewhat pessimistic, but we know that, in one of his letters to Stella, Swift tells her that he has just discovered that leap year comes every four years and that all his life he had thought it came every three years. There are many who are not aware that the Paschal Moon which decides the date of Easter is a fictitious luminary which comes to the full 14 days after the previous real new moon thereby anticipating the real full moon by, on the average, three-quarters of a day. The following sentence from the late J. A. Froude's *Lectures on the Council of Trent:* "Philip died early, leaving two sons: Charles, born in the Low Countries in 1500, the first year of the century—a date easy to remember—and Ferdinand, born in Spain a few years later"—shows us that even a brilliant historian may be mistaken as to when a century begins or ends. If one of us were entitled to receive a pound a day, he would certainly be surprised if he were told that the hundredth payment was the opening one of the second series of payments. The well-known *Nineteenth Century* did not change its title to *The Twentieth Century and After* until the issue of the number for January, 1901.

After this preliminary excursion, let us come to the object of this paper, which is to note the errors in chronology which may arise in the passage from the Roman to the Christian Eras. Here it may be remarked parenthetically that there is some incongruity in using the English words, "Before Christ" and the Latin words, "Anno Domini" to distinguish the eras from each other, and it would be interesting to know at what date the A.A.C. or "Anno Ante Christum" of ancient usage was displaced in English-speaking communities by B.C.

In early times historians were little more than annalists who very naturally took as their starting point some event of signal national importance in their eyes. For the Romans such an event was the founding of the City of Rome, which occurred in the year 753 A.U.C. before the birth of Christ, and the computation of time by the Roman Era did not cease until many centuries of the Christian Era had elapsed. As late as 1415 A.D. the

Roman Era was used in Portugal in dating official documents and public instruments. Living in Rome in the Sixth Century was a venerable abbot, Dionysius Exiguus or Dionysius the Lowly, who is said to have possessed no mean knowledge of Latin and Greek. He was writing on that difficult subject—the time of Easter—when he learned that chronologists of his day were adopting the practice of calculating their years from the date of the accession of the Emperor Diocletian, i.e., they were introducing the Diocletian Era to their readers. Dionysius was unwilling to count his cycle of years, in a work dealing so closely with the chief festival of his church, from the date of accession of an impious and persecuting tyrant and he decided that his era of chronology should be computed from the earliest date sacred to the Founder of Christianity, and, when in the year 527 A.D. his chronological scheme was published, it began with March 25 of the year 1 A.D. Here then is the dividing line between the years reckoned B.C. and those reckoned A.D. There is no year named 0; the year 1 B.C. is followed by the year 1 A.D.

At this stage it may be well to acquaint ourselves with the correct scale to be adopted in computing the interval of time between two dates—one B.C. and the other A.D. Herschel states it as follows: "The sum of the nominal years B.C. and A.D. must be diminished by 1. Thus from January 1 B.C. 4173 to January 1 A.D. 1582, the years elapsed are not 5,755 but 5,754."

The failure to apply this rule has led to errors which made curious reading. Classical scholars selected 1935 as the year in which to celebrate the bimillennium of the poet Horace who was born in the year 65 B.C. The bimillennium of the poet Virgil, born in 70 B.C., was initiated by the Italian Government by elaborate ceremonies and the issue of memorial stamps in 1930. We see that in the case of each of these poets the number of years between either poet's birth and the bimillennial celebration thereof was not 2,000 years but only 1,999. In the eleventh edition of the *Encyclopaedia Britannica* two scholars, one an historian, appear to have gone astray on this chronological point. In the article on Augustus we read: "He died on August 19, A.D. 14, on the anniversary of his entrance on his first consulship 57 years before (43 B.C.)," and in that on Ovid it is stated that he was born on March 20, 43 B.C. and that "he died in his 61st year in A.D. 17." Coming to more recent times we find in Mr. H. V. Morton's book, *In the Steps of St. Paul*, the statement, "There is an ancient tradition that he (St. Paul) died in Rome, aged 68 years, in the year 67 A.D. If we accept this tradition we must imagine his birth to have occurred in the year 1 B.C." It is unnecessary to give further instances: enough has been written to show that the rule which should be followed is frequently broken.

With regard to the bimillennia of the poets Horace and Virgil, it may be noted that the Romans had the habit of counting inclusively, and to them "three days ago" meant the day before yesterday. This inclusive counting by which "every fourth year," was interpreted to mean "once in three years" nearly wrecked Caesar's calendar reform, as during the first 36 years after its initiation the priests decreed a leap year every three years. The resulting error of three days was corrected by Augustus who omitted leap years altogether for a period of 12 years, thus bringing the Julian calendar back into its proper sequence. This inclusive counting is doubtless associated with some of the errors to which attention has been drawn.

NEW BOOK FROM BELGIUM

Reviewed by the Reverend Edward S. Schwegler, D.D.

LES SECRETS DES CALENDRIERS A LA PORTEE DE TOUS par *J. M. Oudin, Tournai, Belgique, 1939.*

M. OUDIN is a doctor of science and a professor at the Ecole Française in Hal, Belgium. He has produced a handy and clear exposition of what may be called the more technical aspects—indeed, of what he calls in his title the secrets—of our Gregorian calendar.

The main portion of the work goes thoroughly into all those points about the calendar which puzzle the average reader. We find here explanations of the *Dominical Letter,* the *Solar Cycle,* the *Lunar Cycle,* the *Golden Number,* the *Epacts,* the calculation of the *Easter* date, the *Roman Indiction,* the *Julian Period,* and related matters. For anyone taking his first steps into the domains of knowledge to which a study of our familiar calendar will lead, this book would form an excellent guide.

Besides an informing text, the work also contains several good and practical tables. One is a perpetual Julian calendar, giving the *Dominical Letter,* the *Golden Number,* and the Date of the Moon for any *Julian Date.* Still better is a *"New Perpetual Calendar,"* covering two pages, which can be used for any Julian or Gregorian date. With the aid of this, one can find the correct version of the calendar for any particular year, the weekday for any particular date, the date of Easter for any year, and the dates of the principal movable Church feasts for that year. The comprehension of so many details in one table is rather a feat.

M. Oudin's book, apart from its dissection of our present calendar, takes on added significance because (to quote some notes on the work by the Abbé Chauve-Bertrand, eminent French authority) "it includes, and approves, a *'Discourse on the Reform of the Calendar.'* " "This," still quoting Chauve-Bertrand, "is a lecture delivered by M. Pierre Humbert, learned professor of mathematics and astronomy in the University of Montpellier on the occasion of the re-opening of one of the school years at the university."

In his interesting discourse, which is to be found at the end of the book, M. Humbert first makes reference to the slight error of about one day in 20 centuries* that exists in the Gregorian calendar, but he makes light of this comparatively small inaccuracy and indicates several feasible means of obviating it in the distant future.

With similar despatch, M. Oudin disposes of the Easter question, point-

*Editor's Note: This error amounts to an increase of 26 seconds every year according to P. W. Wilson, author of *The Romance of the Calendar.* It will require 3,323 years for this error to amount to one day.

ing out that religious authorities would find no insurmountable obstacle in placing Easter on some definite Sunday of the year.

But when M. Oudin comes to the proposal of stabilizing the whole calendar he gives himself pause. First, he weighs the 12-month plan against the 13-month (each, of course, with "supplementary" days), and finds that the former "would disturb ancient customs rather little," whilst the latter "would upset our customs violently, and would oblige us to abandon the semester and trimester, those subdivisions of the year whose practical usefulness is incontestable."

Unfortunately, one gathers from M. Humbert's text, as from some other continental works, that Americans are sturdy partisans of the 13-month plan. Anyone familiar with the progress of calendar reform activities in this country knows how mistaken this notion is. For some time now the only active and effective movement to stabilize the calendar in this country has come from The World Calendar Association, which, as everyone knows, or should know, proposes a 12-month plan.

On the whole, M. Humbert does not seem over-sympathetic to a complete stabilization of the calendar. Thus, for example, he emphasizes the fact that the week "has been known from the time of the Babylonians and Hebrews, who transmitted to the world the notion of a weekly rest day, and from the Greeks and Romans who gave the days the names we have retained." He also points out that the succession of these days, "always respected by the reformers, has unrolled uniformly and without a breakdown through the entire history of the world"; and that "the thoughtless abandonment" of the week "by the Convention (i. e., during the first French Republic, from 1792 to 1795), which replaced it by the *décade*, was not one of the least causes for the failure of the Republican calendar."

But one cannot agree with some of these theses. The Babylonians did not have a true seven-day week, and the origin of the latter among the Hebrews is veiled in the mists of time. It cannot, therefore, be demonstrated that the seven-day, uninterrupted week has rolled on "through the entire history of the world." As for the Republican calendar of France, there can be no comparison between it and a plan like The World Calendar. The former deserted the seven-day week altogether and substituted a ten-day period; the latter retains the seven-day week, emphasizes it, builds upon it. The occasional interruption of the mathematical septenary succession in modern plans for calendar reform is not even the vaguest shadow of the Convention's *décade*.

M. Humbert again reveals his lack of sympathy with proposals to stabilize the calendar when he says, "In summing up, we find that there is still hesitation, and that we are still far from a solution. And when everything is considered, the question may well be asked whether the proposed change is really necessary, and whether the inconveniences some are

pleased to point out are sufficient to justify a reform which, in spite of all one may say, is rather radical, and which would give to our calendar a dull monotony entirely devoid of all poetry. Are we really so much embarrassed by the fact that the same days of the week do not correspond to the same dates of the month? This co-existence of two series, the one independent of the other—isn't this, on the contrary, often valuable? And how many times does not the indication of the day correct or confirm that of the date? Although we welcome with sympathy all agreements regarding the fixation of Easter, a reform that is certainly and immediately useful, we are not in a hurry to applaud proposals which, for reasons that are not absolutely evident, upset completely a calendar that is almost irreproachable, and to which we are attached by a tradition of many centuries."

Let us first turn our attention to poetry. Who can say there is no poetry in The World Calendar? There is the poetry of symmetry and regularity and parallelism. An element of poetry, after all, is meter and rhythm. But on the other hand: if The World Calendar lacks poetry, so does a sextant, or a thermometer. One does not measure physical quantities with odes and satires, and couplets and quatrains. And the calendar, after all, is fundamentally a means of measuring time.

To take another point. That we are many times embarrassed by the fact that "some days of the week (better, *all* days of the week) do not correspond to some (better, *any*) dates of the month" has been amply set forth in article after article of this very *Journal of Calendar Reform*. Is it not embarrassing, for a very familiar example, to know one's birthday, but not to know on what day of the week one was born?

Further on M. Humbert tells us that the indication of the day will often confirm a date in our present calendar. Would it not do the same in The World Calendar? The date, "Wednesday, October 4," would naturally be a doubly confirmed date in either calendar. But the added advantage of that date in The World Calendar would be that "October 4" would at once mean "Wednesday," and that "The First Wednesday in October" would at once mean "October 4." Which system, may one ask, would produce the greater confirmation of dates?

Let us quote a final passage from M. Humbert that gives a total misconception of modern calendar reform: "One will naturally ask himself: was it for this ignoble task that the League of Nations, toward which are turned so many eyes full of hope, was founded? Are its labors to be confined to this? The Treaty of Versailles, the Locarno Pact, a non-aggression treaty, the rights of the people, ethnic frontiers, colonies and mandates, European equilibrium, the Orient against the Occident, Orontes against Tiber—these are the distressing problems of the present hour; and behold the augurs of the Quai Wilson, lost in interminable Byzantine discussions: asking without a smile if 2800 or 2900 will be leap years! We do not want

to scoff at them. These attempts to bring our calendar, necessarily inexact because human, as close as possible to the divine perfection of their astronomical models, and this chagrin which savants reveal at the thought of allowing even the slightest error to remain, even if this were only some seconds in several centuries—all these things seem to be connected in some way with one of the great preoccupations of the age: the desire to introduce purity and simplicity into all possible domains."

All the above is excellent satire, but it is not truth. The League of Nations specifically put aside the matter of the slight error in the Gregorian leap-year calculation. It concentrated on improving the yearly calendar, not the centurial arrangement of the leap years. If all that had come out of the League discussions were a suggestion about a new interpolation to correct the error of a day in 20 centuries, then M. Humbert would be justified in waxing ironical. But the League definitely passed over this detail and concentrated upon the various plans for making the *yearly*, not the *centurial*, calendar stable. And it has done the world the very great service of sifting out the various proposals and choosing finally the 12-month, equal-quarter plan. So M. Humbert's satirical arrows are a trifle misdirected.

In another point our writer might draw a distinction. He says that our present calendar has behind it "a tradition of many centuries," and that "it should not be disturbed until there is a well-nigh universal demand for such a change." Our calendar has behind it not *a* tradition, but numerous traditions. Some of these are, from a religious standpoint, essential, like the one demanding that there shall not be more than six days of work without an intervening period of rest and worship, or the one insisting that Easter always fall on a Sunday. But whether the well-known irregularities of our calendar, or the absolute septenary succession of the day of rest, or the present calculation of the Easter date, are essential, reasonable, and unshakable traditions is another question. Century-old but non-essential traditions have been set aside in ecclesiastical history numerous times. Witness, for example, the Gregorian reform itself, which dropped ten days from the calendar and abandoned the Julian computation of the leap year.

As for a "universal demand": the demand should be universal in the sense that most persons of education and authority should approve the change. Even the statement of the Holy See in 1924—that it would be "neither proper nor acceptable to depart" from "firmly established traditions" "without weighty reasons of universal concern"—does not imply there be a *physically* universal demand for a change. Such a demand would be well-nigh impossible. Here again one may appeal to the Gregorian reform, which, though approved by most people of education and good sense, was nevertheless flatly rejected by a number of Protestant states.

On the other hand, to return once more to our book: does not a work like this, with all its rules, and formulas, and tables, and "secrets," demonstrate in the best possible fashion that our calendar needs simplification? With The World Calendar in use, such a work would become overnight an historical curiosity. But meanwhile, the public must be increasingly educated along these lines. Those who believe in calendar reform must be untiring and unceasing in their efforts to make more and more widely known the advantages of a simplified calendar. Only so will the ground be fertilized and nourished, and one day bring forth the desired fruit.

CURRENT PRESS COMMENT

13-Month Experiment Ends

Chicago Journal of Commerce

Advocates of calendar reform have met with a setback in the action of Sears, Roebuck and Co. in returning to a calendar-month basis of reporting its sales after a ten-year experiment with 13 annual periods of four weeks each. It was ten or 12 years ago that the movement for an international fixed calendar of 13 months reached its crest in this country under the leadership of the late George Eastman.

Although the movement gained considerable ground among business concerns in this country it did not gain enough. Despite all the arguments and such actions as that of the National Association of Cost Accountants, whose board of directors adopted a resolution strongly favoring the 13-month year, business generally held to the Gregorian calendar, with its unequal months and with the same dates falling each year on different days of the week.

It appears the habit of considering business statistics on a 12-month basis was too strong, and while the new form had evident advantages from the accounting viewpoint, in the popular mind the "four weeks ending May 21" did not seem to carry the same idea as a full regular month.

The Sears, Roebuck statement explained in reporting February sales it abandoned the four-week period because relatively few other companies adopted it. There was comfort for reform advocates in the company's assertion to continue the 13-period year within the organization.

* * *

Proposals for calendar reform, which at times has been favored by many business concerns, take various shapes. In contrast with the proposal for a year of 13 months of four weeks each, is The World Calendar plan for retaining the 12-month basis but dividing the year into equal quarters of 91 days. Adherents of the latter project say they are not discouraged by the recent action of Sears, Roebuck and Company in discarding the 13-period year for its published sales reports. Charles C. Sutter, Director of The World Calendar Association, writes: "Calendar reform is not dead. It has not 'met with a setback' due to the action of Sears, Roebuck and Company. And the 13-month calendar, which once had a skyrocket ascendency in popular favor did not have to wait for the Sears, Roebuck coup de grace, but met its end several years ago. In fact, it has always had a rather precarious existence.

"In 1937 the League of Nations' Council at the suggestion of the Government of Chile, unanimously approved a proposal to submit a plan of calendar reform to all nations. There was no mention, before this tribunal of nations, of the 13-month plan. For the plan that Chile submitted was the 12-month equal-quarter calendar, known as The World Calendar. The result of this survey to date is that 14 nations have approved The World Calendar. So calendar reform is not shelved. On the contrary, the movement is gaining headway. So much so that it is now proposed to place the new calendar into operation by January 1, 1945."

Chamber of Commerce Review

London Chamber of Commerce Journal

In view of the importance now attached to statistics, and when all manner of new ideas are adopted in an effort to simplify and speed up business, it is surprising how many business men are content to jog along with our present cumbersome calendar, complicating, as it does, business which is already quite complicated enough. It surely must be obvious that a calendar which this country adopted in 1752, which allows four months 30 days each, seven 31, and one 28 with the exception of every fourth year when an extra day is thrown in, where Easter is allowed to wander from month to month, and where the quarters are not equal quarters at all, forms a definite hindrance to business and is hopelessly unsuited to modern needs. The London Chamber of Commerce has long recognized this and the advantages which would be gained from the adoption of a rational calendar. One cannot help but think that the reform will come sooner or later and, so far as business is concerned, the sooner the better.

EXCERPTS AND REVIEWS

Length of the Calendar Year

By H. W. BEARCE

National Bureau of Standards,
Washington, D. C.

In *The Scientific Monthly*, December, 1932

SINCE the calendar year contains sometimes 365 and sometimes 366 days, the average length is determined by the relative frequency of occurrence of these two numbers, that is, by the leap-year rule.

Under the Gregorian leap-year rule every fourth year is a leap year, except that of the century years only those years that are evenly divisible by 400 are leap years. That is, in a period of 400 years, three years that would normally be leap years, under the four-year rule, are not counted as leap years. The average length of the calendar year under the Gregorian leap-year rule is, therefore,

$$L_{\text{Gregorian}} = 365 + 1/4 - 3/400 \text{ days} = 365.24250 \text{ days}$$

On comparing this value with the length of the tropical year, as calculated from Newcomb's equation, it is seen that the calendar year is longer than the tropical year at the present time by 0.0003 day, or 25.92 seconds. Moreover, if the tropical year is shortening and if it continues to shorten in accordance with Newcomb's equation, this difference will increase as time goes on and in the course of some 3,300 years from the time when the two were in agreement an error of a full day will have accumulated as a result of this increasing difference between the tropical year and the Gregorian calendar year.

Using Newcomb's equation to project back into the past, it is found that in 3006 B.C. the length of the tropical year was 365.24250 days. That is, at that time the length of the tropical year was the same as the average length of the calendar year under the Gregorian leap-year rule. The Gregorian calendar was not in use at that time, and by the time it was adopted, in 1582 A.D., the tropical year was already shorter than the Gregorian calendar year by some 24.3 seconds.

Because of this error in the average length of the Gregorian calendar year, as compared with the present length of the tropical year, it has been suggested by Marvin* that in revising our calendar we should at the same time adopt a more nearly correct leap-year rule. A more nearly correct rule has, in fact, already been tentatively put into effect by the Greek Orthodox Church, which in its adoption of the Gregorian calendar did not adopt the Gregorian leap-year rule, but in its stead, a more accurate one under which in a period of 900 years, seven quadrennial years that would normally be leap years are not counted as leap years. Under this leap-year rule the average length of the calendar year is

$$L_{(Gk)} = 365 + 1/4 - 7/900 = 365.24222 \text{ days}$$

It will be noticed that, to four decimal places, this value is in agreement with the present length of the tropical year.

Obviously, if the tropical year continues to shorten in accordance with Newcomb's equation this leap-year rule will, in the course of time, become incorrect even as the Gregorian rule has already become incorrect, and it, in turn, will need to be revised. However, it seems likely that before that time astronomers will have determined new and more exact values for the constants of Newcomb's equation, so that revision may be necessary.

Various leap-year rules are discussed in detail by Marvin in the papers referred to.

With further reference to the supposed necessity for adopting a more exact leap-year rule, it should, perhaps, be pointed out that this may be regarded by some as a case of "straining at a gnat and swallowing a camel," since even with a perfect leap-year rule the calendar and the tropical year are bound to be "out of step" by at least one-half day once in each four-year period. For example, if the calendar year and the tropical year are "in step," that is, begin at the same time, at the beginning of a four-year period, they will be "out of step" by one-fourth day at the end of the first year, one-half day at the end of the second year, three-fourths day

*C. F. Marvin, *Popular Astronomy*, May, 1923, and "Standards Yearbook" (Bureau of Standards), 1929.

(or one-fourth day in the opposite direction) at the end of the third year, and again "in step" at the end of the fourth year. It may, therefore, be unwise to be troubled over-much by a cumulative error of one day in about 3,300 years. It might be just as satisfactory to correct the Gregorian leap-year rule by simply dropping out an extra leap year once in each 3,300 years. The average length of the calendar year would then be 365 + 1/4 — 3/400 — 1/3300, or 365.24220 days. This value is in agreement with the present length of the tropical year, as calculated at an earlier point in this paper. The discrepancy that has already accumulated could be corrected by counting as an ordinary year some year in the near future that would normally be counted as a leap year.

A Fixed Easter

In *The Modern Churchman*, Oxford, England, February, 1940

DR. H. D. A. MAJOR, *Editor*

WITH our present calendar the earliest day on which Easter can fall is March 22 and the latest April 25. This year Easter falls on March 24. This mobility of Easter is a cause of much inconvenience to many classes of people ranging from our educational authorities to those simple villagers whom tradition compels to plant their early potatoes on Good Friday. The practical conveniences of a fixed Easter are many. Although the demand for a fixed Easter was voiced as long ago as 1682 by Ouvard of Tours, nevertheless it has not yet been secured in any country. The reasons for this are roughly speaking three: (1) If Easter Sunday is to be stabilized, it is necessary to make other preliminary reforms in our present calendar. (2) Inasmuch as Easter Sunday is a Christian religious festival, it is necessary to secure the agreement of the ecclesiastical with the civic authorities if Easter is to be stabilized effectively. (3) Inasmuch as the whole modern world is becoming in many respects a single community, it is necessary to have the agreement of the majority of mankind to calendar change.

Our present Easter, due to our Christian festival being dependent on the mobile Jewish Passover and that Jewish Passover being dependent upon the fickle moon, has been, as students of Church history know, a source of no little trouble to the Christian Church itself, and very nearly split it in two with its famous Quartodeciman controversy in the Second Century. Possibly because there are many other reforms which seem to be and are, indeed, more urgent. But the real reason we believe is that there have been serious divisions of opinion upon the larger calendar reforms which lie behind the securing of a stabilized Easter. Knowledge comes but wisdom lingers, and at last the advocates of the reformed calendar seem to be approaching agreement on right lines, namely, the abandonment of every proposal except the absolutely necessary essentials.

Calendar reformers seem to be now generally agreed to beginning the year on January 1, and to retaining the ancient local names for the months and days of the week. They propose to divide the year into four quarters of equal length: each quarter to begin on Sunday and end on Saturday, and each to contain three months—13 weeks—91 days. Yearly there will be an extra Year-End Day (a holiday), and every leap year a Leap-Year Day (a holiday), and Easter Sunday will be stabilized on either the second or more probably the third Sunday in April.*

The heads of the great Churches we believe will offer no opposition. If Great Britain leads the way the bulk of mankind will quickly follow. The actual situation, writes a well-known M.P., is: "The necessary Act of Parliament has already been passed. All that is needed is an Order in Council."

Two notable changes in our time were achieved by members of the Modern Churchmen's Union. It is to Lord Avebury that we owe our August Bank Holiday and to Mr. Willett that we owe our Summer-time. Shall we owe our fixed Easter, that is to be, to yet another of our members? The Great War was no small factor in securing for us the advantages of Daylight Saving. May we not hope that the present war will secure for us a fixed Easter?

*EDITOR'S NOTE: Churches are generally agreed on the second Sunday in April for a stabilized Easter.

FROM THE MAIL BAG

I hope that 1940 will show a still further advance in acceptance of The World Calendar.—Dr. L. S. Rowe, Director-General, Pan American Union, Washington, D. C.

We have long favored calendar reform and believe it will be only a question of time when it will be brought about. The 12-month calendar is, of course, the only form of modification which stands the slightest chance of adoption throughout the world.—Alden C. Noble, Chairman, Merchants Fire Assurance Corporation of New York, N. Y. C.

Please accept my thanks for the excellent publications about the calendar reform which you have kindly sent me.—Dionysios, Orthodox Archbishop of Warsaw, Metropolitan of Poland.

Some day I hope to see the continual dropping of the water of intelligence wear away the stone of prejudice and indifference, so that The World Calendar may find free access to its potential usefulness. —Rev. Dr. E. F. McGregor, Norwalk, Conn.

I have always been interested in calendar reform and I approve the type represented by your society. When I was president of the Academy of Arts and Sciences, I was glad to help through this organization a vote of approval for the new World Calendar.—Prof. G. H. Parker, Harvard University.

I think the present calendar gives universities as much t r o u b l e in arranging their programs each year as any other type of organization. Our Administrative Committee of the entire university spent about an hour recently in trying to arrange the University Calendar for next year because Mondays, etc., did not come in the right part of the month. The new calendar would be a great convenience which would obviate these difficulties for us. University people ought to be progressive enough to seize these advantages and render willing support.—S. C. Lind, Dean, Inst. of Technology, Univ. of Minn.

I continue to be very interested in this very desirable reform.—A. J. Hills, Canadian National Railways, Montreal.

For a long time I have been interested in proposals for a reform of the calendar, and have had many such proposals called to my attention; but I believe that none of them were as simple, or had as good a chance of universal adoption as the one you are advocating. — Rev. Raymund F. Wood, S. J., Spokane, Wash.

I hope to live to see The World Calendar adopted. — Dr. George Grant MacCurdy, Prof. Emeritus (Yale), Old Lyme, Conn.

What a great thing the new calendar would be for administrators of schools. It certainly would clear up many of our present problems. — W. R. Buell, Supt. of Schools, East Aurora, N. Y.

I believe with you that a unity of time would be a decided step in a direction of greater cooperation and understanding among nations. — Mrs. Frederic Beggs, Wyckoff, N. J.

For many years I have followed calendar reform, particularly through the American Association for Advancement of Science.—Dr. H. J. Van Cleave, Univ. of Ill.

As a retail merchant and druggist, I am in favor of The World Calendar as against the 13-month plan. The World Calendar will work *best*. It solves the calendar puzzle in the most scientific, and comprehensive style, and makes business records an easy matter for reports.—Prof. Harry L. Thompson, Salt Lake City.

I feel enthusiastic over this extremely simple, practical and permanent calendar. The present calendar always has been quite a handicap in our office. In order to determine on what day of the calendar a certain day of the church year (Sundays and Festivals) fell, we are obliged to use a specially and somewhat laboriously prepared tabulation for the last hundred years of the existence of our church work. —Rev. S. Michael, Statistician, Evangelical Lutheran Synod, St. Louis.

There appears no doubt, in my mind, that a change in our calendar is a much-needed reform.—Jacob Weis, Brooklyn.

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ARGENTINA: Comité Argentino del Calendario Mundial, Rev. Father Juan V. Monticelli, S.S., Vice Chairman, Colegio Pio IX, Calle Adolfo Berro 4050, Buenos Aires.

AUSTRALIA: Committee on Calendar Reform of the Australian and New Zealand Association for the Advancement of Science, C. W. Allen, Secy., Solar Observatory, Canberra.

BELGIUM: Belgian National Committee on Calendar Reform, Professor M. Dehalu, President, l'Université de Liège, Liège.

BOLIVIA: Comité Boliviano del Calendario Mundial, Don Moises Santivanez, Chairman, Biblioteca Nacional, Sucre.

BRAZIL: Comité Brasileiro do Calendario Mundial, Captain Radler de Aquino, Chairman, Rua Raul Pompeia No. 133, Rio de Janeiro.

CANADA: Rational Calendar Association, Lt.-Col. J. Murray Muir, Secy., 82 Jane St., Toronto 5.

CHILE: Comité Chileno del Calendario Mundial, Prof. Alberto Cumming, Chairman, Calle Manuel Rodriguez, Santiago.

CHINA: Chinese Association for the Study of Calendar Reform, Dr. Ch'ing-Sung Yü, Director, National Institute of Astronomy, Kunming, Yunnan.

COLOMBIA: Comité Colombiano del Calendario Mundial, Dr. Eduardo Posada, Chairman, Consulado General de Honduras, Apartado 42, Bogota.

COSTA RICA: Comité Costarricense del Calendario Mundial (Igualmente de Guatemala, Honduras, El Salvador y Nicaragua), Don Teodoro Picado, Chairman, San Jose.

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GERMANY: Deutscher Ausschuss für Kalenderreform, Dr. Grosse, Geschaftsfuhrer, Neue Wilhelmstr. 9/11, Berlin N. W. 7.—Der Weltbund für Kalenderreform, Dr. Rudolph Blochmann, Secy., 24 Lornsenstrasse, Kiel.

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IRELAND: Committee for Calendar Reform, E. K. Eason, Secy., 80, Mid. Abbey St., Dublin.

ITALY: Itallan National Committee on Calendar Reform, Prof. Amedeo Giannini, Secy., Via del Seminario, 113, Rome.

MEXICO: Comité Mejicano del Calendario Mundial, Dr. Joaquin Gallo, Chairman, Observatorio Astronomico Nacional, Tacubaya, D. F.

PANAMA: Comité Panameno del Calendario Mundial, Don Octavio Mendez Pereira, Chairman, University of Panama, Panama.

PARAGUAY: Comité Paraguayano del Calendario Mundial, H. E. Senor Ministro Coronel don Luis Irrazabal, Chairman, Calle Moneda 1938, Santiago, Chile.

PERU: Comité Peruano del Calendario Mundial, Don Luis Montero y Tirado, Chairman, Casilla 220, Lima.

POLAND: Polish Committee for Calendar Reform, Albin Jakiel, Chairman, Krasiuskiego 21 m. 27, Warsaw.

SOUTH AMERICA: Comité Latino-Americano del Calendario Mundial, Rev. Eugenio V. Rosso, Acting President, Instituto Teologico Don Bosco, Cisterna, Santiago, Chile. This committee directs the activities of national organizations in Argentina, Brazil, Costa Rica, Mexico, Uruguay, Chile, Peru, Venezuela, Bolivia, Cuba, Ecuador, Colombia, Dominican Republic, Paraguay, and Panama. The honorary presidents of the committee are Dr. L. S. Rowe, Director-General of the Pan American Union, and H. E. Dr. Alfredo de Castro.

SPAIN: Spanish Calendar Reform Committee, Rev. Father Antonio Romana, S.J., Chairman, Observatorio del Ebro, Tortosa.

SWITZERLAND: Swiss Committee on Calendar Reform, Prof. Emile Marchand, Secy., Mythenstrasse 2, Zurich 2.—Comité International de Coopération de l'Association Universelle du Calendrier, M. Raymond Mage, Secrétaire Général, Palais Wilson, Geneva.

TURKEY: Committee on Calendar Reform, Dr. M. I. Dereoglu, Secy., P. O. Box 1121, Hanhaym Han No. 1, Istanbul.

URUGUAY: Comité Uruguayo del Calendario Mundial, Prof. Alberto Reyes Thevenet, Chairman, Liceo de Ensenanza Secundaria Hector Miranda, Calle Sierra 2268, Montevideo.

VENEZUELA: Comité Venezolano del Calendario Mundial, Don Edgar J. Anzola, Chairman, Apartado de Correos No. 207, Caracas.

YUGOSLAVIA: Yugoslavian Committee on Calendar Reform, Georges Curcin, Chairman, Poenkareova 25—III, Belgrade.

EDITORIAL PARAGRAPHS

Days, weeks and months play such an important part in our lives that it is difficult to realize what life was like in the past, when people had to get along without anything in the form of a calendar.—San Francisco (Cal.) *Commercial News.*

Most people seem willing to comply with the President's request for an earlier observance of Thanksgiving Day. They wish he'd gone further—they want him to advance the date to Monday. Then everybody would have a two-day holiday.—Faribault (Minn.) *News.*

Fourteen nations have stated officially that they are ready to adopt the new calendar.—Liberty (Mo.) *Advance.*

The partisans of the 12-month plan simply wish to adapt, in a wise and discreet reform, our secular and millenary calendar to the exigencies of modern life.—Paris (France) *La Croix de Paris.*

The *Journal of Calendar Reform* is now in its tenth volume. This admirable magazine is of practical interest to all who are concerned with the improvement of the present cumbersome and antiquated calendar.—San Francisco (Cal.) *Sierra Educational News.*

The World Calendar makes sense which is why sensible persons are convinced that it should be put into world use.—Berkeley (Cal.) *Courier.*

The leading commercial countries could adopt The World Calendar by simple legislation, the rest would be forced to follow suit.—Lead (S. D.) *Call.*

Everybody who has given thought to the question of changing the present calendar knows the inconveniences of the one now in use.—Clifton Forge (Va.) *Review.*

That the interest in the reform of the calendar is becoming widespread is indicated by an article written by the Reverend Swami Omkar, a Christian of India and head of an Indian ashram.—Utica, (N. Y.) *Federal Council Bulletin.*

We have always thought that time went on forever, without change. Perhaps it does, but the general interest in The World Calendar plan proves that the method of measuring time is subject to change.—Odebalt (Ia.) *Chronicle.*

The first Thanksgiving Day proclamation, issued by William Bradford, Governor of Plymouth in 1621, Named Friday, November 19.—New Brunswick (N. J.) *News.*

Monday holidays are only one of several suggested changes in the calendar, all intended for the purpose of greater uniformity and efficiency not only in business but in all the other matters in which the calendar is an important part.—Owosso (Mich.) *Argus-Press.*

One result of the pacification of Europe —if and when it comes—will be the universal adoption of a fixed date for Easter, instead of a "movable feast." — London (England) *Leader.*

The beauty of The World Calendar is that it provides fixed dates for holidays and other observed events. — Waterbury (Conn.) *Democrat.*

The proposed perpetual calendar has much to recommend it. It has been approved by 14 governments. — Lansing (Mich.) *State Journal.*

Business men, workers, professional people, and everyone in all walks of life should be interested in the proposal for revision and modernization of the calendar.—Lovell (Wyo.) *Chronicle.*

The World Calendar harmonizes with the solar year and its four seasons, by adding an extra Saturday at the end of every year and an extra Saturday in leap years. It all makes sense which is why sensible persons are convinced that it should be put into world use.—Harrodsburg (Ky.) *Herald.*

Christmas was given a fixed date in the solar calendar long ago by Church action, so the fixing of the second great feast of the Church would not be without precedent.—Council Bluffs (Ia.) *Nonpareil.*

Correspondents in the English Press have for some time past been advocating a calendar reform with a fixed Easter.—Carnarvon (Wales) *Herald.*

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Journal of CALENDAR REFORM

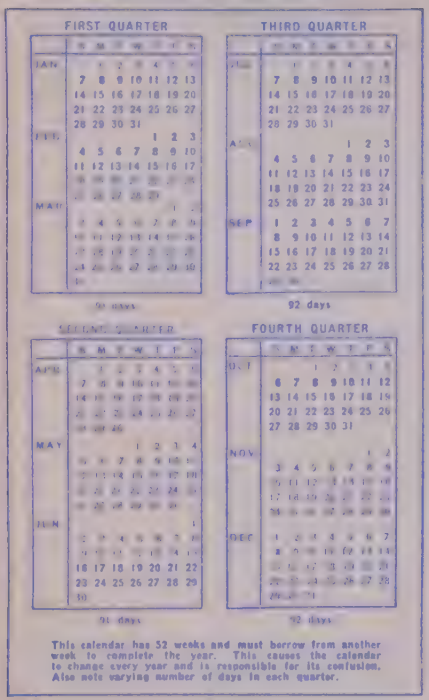
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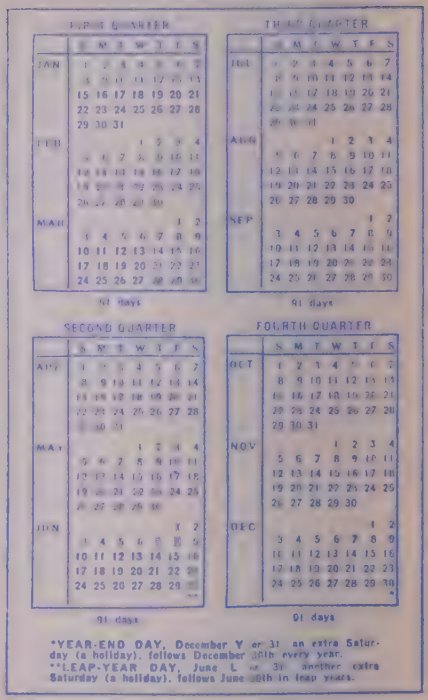
A LEAP YEAR

PRESENT GREGORIAN CALENDAR



This calendar has 52 weeks and must borrow from another week to complete the year. This causes the calendar to change every year and is responsible for its confusion. Also note varying number of days in each quarter.

PROPOSED WORLD CALENDAR



*YEAR-END DAY, December 31 an extra Saturday (a holiday), follows December 30th every year.
**LEAP-YEAR DAY, June 31 another extra Saturday (a holiday), follows June 30th in leap years.

EACH YEAR DIFFERENT

This calendar is always different from year to year.

The quarters are unequal in length. In leap years the first half-year has 182 days; the second, 184 days.

Each quarter begins and ends on a different day of the week.

Each month begins and ends on a different weekday.

The months have a varying number of weekdays.

Each year begins on a different weekday.

This calendar is unbalanced in structure, unstable in form, and irregular in arrangement.

SOON YOU WILL BE DISCARDING THIS OBSOLETE CALENDAR.

EACH YEAR THE SAME

This 12-month equal-quarter calendar is good for every year.

The quarters are equal in length.

Each quarter begins on Sunday and ends on Saturday, contains 3 months—13 weeks—91 days.

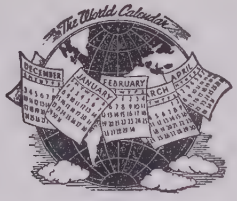
Month-dates always fall on the same weekdays. Each month has 26 *weekdays*—plus Sundays.

Each year begins on Sunday.

Year-End Day and Leap-Year Day, the extra Saturdays, are World-Holidays.

This revised calendar is balanced in structure, perpetual in form, harmonious in arrangement.

SOON YOU WILL BE USING THIS UP-TO-DATE CALENDAR.



LET US ENCOMPASS THE EARTH WITH A NEW ORDER OF TIME

VOL. X THIRD QUARTER, 1940 No. 3

IN ENDORSING The World Calendar at Asheville, North Carolina, on July 9, the National Federation of Business and Professional Women's Clubs further solidified organized women's support of this much-needed revision of the calendar.

Following similar action taken more than a year ago by the two million members of the General Federation of Women's Clubs, the business and professional women have demonstrated that American women are progressively active in their support of the improved calendar. A committee, under the chairmanship of Mrs. Effie Rogers, and consisting of Mrs. Emilia Kennedy and Miss Agnes Mantor, after more than a year of intensive study, presented to the Conference, held at Asheville, the following resolution, which received whole-hearted approval.

"That the National Federation of Business and Professional Women's Clubs, Inc. endorses the calendar reform on the perpetual 12 month plan of equal quarters, known as The World Calendar and requests the United States Government to cooperate with other governments in bringing about calendar reform with a view to making The World Calendar internationally operative whenever the time for such cooperation is deemed proper by government officials."

The World Calendar appeals to women because of its simplicity and orderly arrangement; its economic value as a time-saver; its inherent stability which enables planning long in advance; its regularly recurring and conveniently placed holidays; and finally its two extra World-Holidays, bringing amity, good will and cooperation to the nations and peoples of the world.

With these two outstanding women's organizations adding their voices to the endorsement of governments, learned societies and other organizations, The World Calendar's becoming operative in the civil life of the world may not long be delayed.

Journal of
CALENDAR REFORM

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1940

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CHARLES C. SUTTER, Editor
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REVALUATION OF TIME

By Margaret Becker Kulp

AFTER THE WAR, what then? When these tragic times have become bitter memories, how will man reorganize his life? When these tense days that fall about us like old leaves from an ancient calendar have been brushed back into the past, will the world awake from its nightmare as did Alice, in Wonderland, when the cards tumbled down about her head, and will it start the great task of rebuilding its structure? And will a sane, new World Calendar fit into the scheme of things?

Of one thing you may be certain. The world as we have known it will be forever gone. Standards and values will have changed, and a new order of life will be set up. The world must go to work with an inspired zeal to fashion methods of living to meet the requirements of all human beings. Order must be created out of chaos, stability must follow confusion, harmony must follow strife, and construction must follow destruction, for all of this is but the inflexible working of the universal law of averages. And, under the same law, it must be assumed that out of people's throes of hatred, bondage and devastation must be born understanding, freedom and rehabilitation. And peace must rise like a phoenix from the ashes of a dead past. There will come a great and glorious world of tomorrow, and in this world the devices by which we design our living of today will be simplified, unified and woven into as nearly a complete and harmonious pattern as men may conceive. Space will be reproportioned, time will be reconditioned, and humans will learn all over again the fine art of living amicably together.

It is not merely wishful thinking to look ahead to a time of reorganization and universal house-cleaning. For certain elemental changes in our international life must be brought abreast with the demands of modern times. And there must be no half-heartedness about it, we must do a thorough job. No stone, however small, should be left unturned in this general survey of world conditions and the mechanics by which life is motivated. Old moth-eaten notions and traditions which have lain in the attic of the earth for centuries must be brought out in the light of day and examined. Some of these will be discarded, some will be renovated, but none will be hoarded again if they are not adaptable to the 20th Century way of life. The important thing to remember is that these changes must have a world-wide scope, and not a purely local one, for today the whole world is our neighbor.

The tempo of life has quickened, its horsepower has leaped ahead with breath-taking agility. Back in 1492 it took Christopher Columbus and his

seasick sailors five long tortuous weeks to cross the Atlantic Ocean from Portugal to the Bahama Islands. Today the Yankee Clipper spans the Atlantic in 28 hours. Time was when written messages were relayed over circuitous routes by stage-coach and canal boat. Today we have air mail. Back in the horse-and-buggy days a weekly newspaper, small and inadequate, brought meager news of the world. Today we have elaborate publications with hourly editions. And the radio outruns them all, for we push a button or turn a dial and the living voice of the world speaks to us in our own homes. We have witnessed in one generation the marvels of the cable, telegraph, domestic and trans-oceanic telephones, and in these enlightened times we are privileged to see the miracle of television.

Certainly man has stepped on the accelerators of transit, trade, communication and commerce through the fast-moving decades. But, by some strange paradox, the very gadget which he uses in timing and spacing these channels of exchange and relationships has been singing out of tune with the melody of progress. The Gregorian calendar (that backward handmaiden of Time) has carried on through all the years that have teemed with new devices of industry and invention, a bent and time-worn museum piece, while the rest of the implements for living have been streamlined.

The good Pennsylvania-Dutch folk have a descriptive phrase which would fit the Gregorian calendar perfectly. "Out of kelter," a term which means not attuned or adjusted to existing surroundings or conditions. There you have it precisely. The old calendar has outlived its usefulness in its present form. Its structure is unbalanced, its form unstable, its arrangement ragged and irregular. Its dividing quarters are unequal, its months have a varying and confusing number of weekdays, and the last day of each of its 52 weeks has an annoying habit of popping carelessly into any part of the following week. Holy days and holidays make unexpected, and often unseasonal, entries on the scene, thereby disrupting programs of church, school, businesses, trades, professions, and life in general. It seems unbelievable that in these days and times man should still charter his living by an outmoded measuring-rod of time.

Compare the advantages of the new World Calendar. Here is a time-clock which has balance, unity, stability and perpetuality, accomplished by the mere transposition of several days. It keeps faith with fact in that the four seasons of the year, the 12 months, 52 weeks and the allotted number of days, as established in the Julian and Gregorian calendars, are scrupulously retained. But it finally equalizes these component parts of the calendar and "squares" it into a modernized progressive instrument.

The new World Calendar will give to each month 26 weekdays in addition to its Sundays, and the days will be marshalled into the following week in an orderly way. The first day of the year will always fall on Sunday, the first day of the week, and the last day will always fall on Saturday. In the same manner the first day of each of the four quarters of the year will fall on Sunday, and the last day of each quarter on Saturday. Each quarter will have forever 91 days, with 31 days allotted to the first month in it, and 30 days allotted to the other two. It will be a perpetual arrangement in which

days and dates will sing together for they will be synonymous. Holy days and holidays will be stabilized with the added attraction that many of them will fall in that part of a week that will insure longer week-ends. The two extra days, occasioned by scientific accuracy in computing time, will take up the slack in fitting this old cloak to a new pattern. The first, to be called Year-End Day, will fall on the day to be designated as December Y, or 31. It will be considered as an extra Saturday-holiday, and will fit in between December 30 and January 1. The second, to be called Leap-Year Day, will come around once in every four years just as it does now, except that its place on the new calendar will be in the exact middle of the year. It also will be considered as an extra Saturday-holiday and will fall between June 30 and July 1. Both will be known as World-Holidays. You must agree that the sponsors of this new calendar have indeed followed the counsel of the wise old sage who advised man to emulate the busy little bee and improve each shining hour.

Let us once and for all face the problem squarely and honestly. No one seeks to revolutionize the calendar. Julius Caesar did that in 45 B. C. No one seeks to make a radical revision of it. Pope Gregory did that in 1582. Curiously enough only a few changes have been made in it up and down the ages, and this is as it should be. For the task of revamping so vital an implement of every-day living should be approached with solemn thought and great care. Yet no one can deny that the changes that have been accepted have been of inestimable benefit to mankind.

In reshaping the 358-year-old calendar of Pope Gregory, The World Calendar Association has brought to the work years of study, the advice of scientists from every branch of science. It has given love and profound reverence in the task of making a new calendar a perfect and complete instrument. Its attitude has not been that of reformer, but rather that of a parent who gently but firmly corrects the bad posture and awkward gait of a child. It has no thought of revolutionizing the yardstick of time. Its sole idea is to eliminate its incongruities, to iron out its inconsistencies and irregularities, to give it perfect form and perpetual balance.

In its transition The World Calendar could never produce a year of confusion in its adjustment as was the case in 46 B. C., the year before the Julian calendar was adopted. Nor would it command Time to stand still, as did the adoption of the Gregorian calendar when 10 days were dropped in order to catch up with the overtime generated by the Julian calendar's errors in arithmetic. The World Calendar would glide smoothly and quietly from the end of one year into the beginning of the next.

This proposed plan of calendar revision has been placed before all the nations of the world, and has been enthusiastically endorsed by a goodly number of them. It has met with the approval of national and international bodies and groups from all walks of life and in all branches of religious, educational, professional, scientific and other organizations. It is now placed before the peoples of the earth, offered as a keystone in the upshaping of tomorrow's world. And it will be recognized as an unqualified implement of peace, never as the fiat of a dictator, else it would become unsavory. Its mission is twofold, first as a progressive device in the revaluation of time, and secondly as a common denominator by which all races of men may speak together in the same language of time.

EDUCATIONAL APPROVAL

By HELEN T. COLLINS

Member, Executive Committee, National Education Association of the United States

EDUCATION in general and the National Education Association in particular are vitally interested in the calendar and in any plans for its improvement. The irregularities of our present calendar bear heavily on the administrative work of all those who are connected with our schools and colleges. A school calendar which must be annually prepared is an endeavor that contains all kinds of difficulties, complicated as it is with changing holidays and the fact that Christmas and Easter vacations never occur conveniently within the school year.

Consequently no two school authorities ever quite agree upon a definite and final solution, with the result that many different types of school calendars are in use in different school systems and colleges. This makes it difficult to make comparisons, to arrange state and national educational meetings, to cooperate in observances of special events, or to have members of the same family enjoying vacation periods together.

The school calendar itself is composed of many component parts, each of which taxes the ingenuity, and I may say the patience of college deans, school superintendents, principals, and all those whose administrative duty forces them to concern themselves with this annual problem.

Within the academic year there must be set up schedules of vacation periods, study programs, examination schedules, and many so-called extra-curricular activities such as athletic meets, monthly meetings of societies, tennis tournaments, football games, and so on.

Our present chaotic calendar makes exceedingly difficult the arrangement of these schedules. Some years the program works out very well and Christmas and Easter vacations fall naturally within the weeks allotted. Mid-week holidays often disrupt the scholastic year, and some years vacation periods are longer or shorter than is desired. In preparation of examination schedules it is well-nigh impossible, with the present calendar, to be fair with juniors and seniors, or to prepare a schedule that does not give advantage, let us say, to engineering students at the expense of those majoring in political science.

Annual shows, athletic meets, tournaments and games, as well as faculty meetings, must be planned on days that secure the greatest attendance without interfering with scholastic activities or other similar events. And then, too, middle-of-the-week holidays have a detrimental effect on both students and faculty alike. Students become more restless and less attentive on days preceding and following one-day holidays. If these holi-

days could be moved to Monday, both faculty and students would return to their classes refreshed and ready to tackle their specific problems.

The suggestion to transfer holidays to Monday would be very beneficial to the entire educational world, and an ordered calendar such as The World Calendar with its four equal quarters would make possible the setting up of a scholastic schedule comprising all school activities that would be good not only for the year in which it was prepared, but for all school years as well. Under The World Calendar, for the most part opening and closing dates, vacation and holiday periods for all educational institutions could be the same—permitting each school or college to arrange its own activities within this framework, to meet its own needs. This would lead to a definite cooperation between all universities and schools. The family could rest content that all their children at different schools would return to their home at about the same time.

With definite scheduled vacation periods, and with similar opening and closing dates of all schools and universities, it would be easy to set definite dates for state and national educational conferences which would permit the greatest possible attendance of educators.

The National Education Association first became interested in calendar reform at its meeting at Portland, Oregon, in 1936, although prior to that date educators the country over had realized its importance. The subject was discussed, in the Resolutions Committee, presided over by Miss Amy H. Hinrichs, recent president of the National Education Association, and it was decided to set up a sub-committee on calendar reform.

A committee under the chairmanship of Miss Margaret Rock, of Bridgeport, Connecticut, was instructed to spend the year in intensive study of the entire subject and report their conclusions to the next meeting of the Association, which was scheduled for Detroit, Michigan, the following year. Miss Rock's committee comprised: Mr. J. P. Coates, Secretary-Treasurer of the South Carolina Education Association; Miss Nancy D. Lee, President of the North Carolina Education Association; and Miss Helen Bradley, of Cincinnati.

In July, 1937, the official report of the committee on calendar reform was submitted to the Resolutions Committee. The report went into great detail concerning the calendar, its history, and the particular need that existed for reform of the calendar from the viewpoint of educational authorities. It discussed the two major proposals for calendar revision, namely, the 13-month calendar and the equal-quarter World Calendar. The Rock report specifically said: "Educationally, we would be relieved of the necessity of giving instruction in the different lengths of months which have no significance for most children in our schools. The calendar would be brought within the framework of orderly arithmetic.

"A perpetual Calendar would enable us to work out our educational

almanac, not only for the year in question, but for years to come. Many arrangements would be as perpetual as the Calendar itself."

The report concluded: "These are the general considerations that have led us to the opinion that the adoption of The World Calendar would be of advantage to the great enterprise of education to which we are devoting our lives."

The report was received with a great deal of interest by the Resolutions Committee, and as a result the following resolution, prepared by that committee, received the approval of the Representative Assembly of the National Education Association on July 1:

> "The National Education Association endorses the movement for a simplified calendar as proposed by the Council of the League of Nations. The Association recommends that the members be kept informed as to the latest developments in the progress of this movement for a world calendar."

But the United States educational authorities have not been alone in their interest and approval of calendar reform, for at Tokyo, Japan, in August of the same year, the World Federation of Educational Associations approved a similar resolution.

Conforming with the National Education Association's resolution that its members be kept informed as to the progress of the movement for a world calendar, numerous articles have appeared in educational journals; talks have been given before school bodies and educational groups; and literature has been made available to the schools and colleges.

This year at the National Education Association's meeting, held in Milwaukee, and at the request of the Exhibits Committee of the National Council of Teachers of Mathematics, The World Calendar Association staged a comprehensive exhibit of the story of the calendar. Chronologically arranged was a series of original paintings and calendars portraying the measurement of time from the year 4236 B. C. to the present. The visitor was conducted on a pictorial journey which started with man's earliest time-sense, the separation of day and night. It stopped to depict man's first calendar based on the moon and the working out of the solar calendar by the Egyptians who measured time by the sun from the study of the sky and the shadows thrown on the desert by the pyramids. The Egyptian calendar of 12 months of 30 days each with five closing days of festival was shown.

The exhibit continued with Julius Caesar's study of the solar calendar and his decreeing of the leap-year day which gives us the irregular calendar we now have. The Julian calendar with its months divided into a complicated system of Kalends, Nones, and Ides, was portrayed.

Augustus was indicated rearranging the Julian calendar on the basis of the four seasons, and the Augustan calendar was shown as it would

appear today. The introduction of the week with Sunday as a day of worship was one of the pictures built around the figure of Constantine, and the calendar as influenced by him was graphically shown. Pope Gregory XIII was pictured as consulting with the scientists of his day in an attempt at adjustment of the calendar to scientific accuracy. The Gregorian calendar that we now use followed with its correction of the leap-year rule and the fixing of spring as March 21. The perpetual World Calendar, with its exact 52 weeks, four equal quarters, and two equal half-years, with its Year-End Day holiday and extra mid-year holiday in leap years, was prominently displayed.

The final pictures showed the advantages of The World Calendar in our modern world, its general application, the balance and stability which will be brought into the time-system of the future, as man, ever seeking economic, social, and civic betterment, goes on to fulfill his age-long efforts toward perfection. Finally the ease of adoption in 1944 was demonstrated and the many national and international approvals of The World Calendar by governments and organizations were prominently mentioned. The exhibit attracted hundreds of educational visitors who evinced considerable comment and approval. Large quantities of literature were taken away by teachers to be used in classrooms this fall to present this ever fascinating subject to their pupils.

Delegates to National Education Association conventions have shown an increasing interest in and knowledge of calendar reform and The World Calendar, and it was their interest that brought The World Calendar officially to the attention of the National Education Association.

The Association placed itself behind The World Calendar in 1937, and it continues its interest in the progress that the movement makes, not only in this country, but throughout the world. It looks forward to the day when education will be able to use this simplified and improved calendar.

Surely a calendar which would go a long way toward solving one of education's pressing problems, a calendar which has a measure of national and international acceptance, should enlist the support of all those connected with schools and colleges. Educators everywhere have been persistently plagued by the irregularities of the present calendar and will welcome The World Calendar as a solution of their problem.

OBITUARY NOTES

DR. WILLIAM E. HARPER, director of the Canadian Government's astrophysical observatory at Victoria and one of North America's leading astronomers, died on June 4 at the age of 62. He had been a member of The World Calendar Association since February, 1932.

Other deaths among the membership of The World Calendar Association include *The Rev. Howard A. Johnston*, Milwaukee; *W. C. Higgins*, Editor, Bradford, Pa.; *The Rev. W. E. Shirey, D.D.*, Seymour, Ind.

LEAP-WEEK DISCUSSION

By H. W. BEARCE

National Bureau of Standards

(Publication Approved by the Editorial Committee, National Bureau of Standards, U. S. Department of Commerce)

OBJECTION to The World Calendar has been raised by certain religious groups on the ground that the inclusion of a 24-hour period without weekday name within the last week of each year, and of another such 24-hour period at the end of June of each leap year, would result in an interruption of the regular succession of the seven days of the week, and that this interruption would be in violation of divine command.

There can be no doubt that the inclusion of a 24-hour period without weekday name at any point in the year, whether as proposed in The World Calendar, or as proposed by advocates of the 13-equal-months plan, would result in an interruption of the regular succession of the seven days of the week. This interruption would occur once in each ordinary year and twice in each leap year. That this interruption would be in violation of divine command, or that it would be in any way objectionable from a religious standpoint, is open to serious question.

The inclusion in the calendar year of a 24-hour period without weekday name, or as a double Saturday, as proposed in The World Calendar plan in order to obtain a perpetual calendar, may properly be regarded as no more a violation of divine command than the dropping of a day when crossing the International Date-Line in one direction, and the repeating of a day when crossing it in the opposite direction.

The calendar, on the other hand, may be regarded as a device conceived by man as a means of reckoning time and recording events, and no more of divine origin than is a sun-dial, a clock, or a watch. These instruments have, without objection, been improved from time to time, as the intelligence and experience of man have made improvement possible. There would seem to be no more ground for objection to improvements in the calendar, either those that have already been made, or those that may yet be made, than there is for objection to improvement in sun-dials, clocks and watches.

The religious aspects of calendar revision, especially with reference to the interruption of the seven-day week, have been so understandingly and so completely treated by Rabbi Martin M. Weitz and Mr. Charles C. Sutter, in the *Journal of Calendar Reform*, Second Quarter, 1939, that they need not be discussed in detail here.

Another point that deserves consideration is the fact that neither Ortho-

dox nor Liberal (Reform) Jews accept our present (Gregorian) calendar except for civil purposes. They still use the Jewish calendar in fixing their religious holidays and festivals. Their objection to substitution of The World Calendar for the Gregorian, on religious grounds, cannot, therefore, be accepted as valid. As they now use the Jewish calendar for religious purposes, instead of the Gregorian, so also would they, no doubt, continue to use it instead of The World Calendar, even if that were adopted and used for civil purposes. They would then be no worse off, from the religious standpoint, under the proposed World Calendar than they now are under the Gregorian calendar, and they would have the advantage, in common with others, of being able to use it for civil purposes.

We can all agree that the revolution of the earth on its axis, causing day and night, and the movement of the earth in its yearly journey around the sun, causing the succession of the seasons, are in accordance with laws which transcend human intelligence and human power to alter. These laws must be accepted as a part of the general plan of the Creator and Ruler of the Universe. Surely no one would be so rash as to attempt to alter these laws.

It is a well-established fact that the year as measured by the earth in its journey around the sun does not contain an integral number of days, as measured by the revolution of the earth on its axis. As nearly as has been determined, the tropical year contains 365.2422 days. This excess of slightly less than a quarter of a day per year is what makes it necessary to have an extra day in the calendar year every fourth year (with certain century years excepted).

A further complication arises from the fact that neither 365 nor 366 is evenly divisible by seven. That is, the calendar year never contains an integral number of complete weeks of seven days. There is always a remainder of one day in an ordinary year, and two days in a leap year. From this it follows that each year begins one day or two days later in the week than the year preceding. Successive years are, therefore, not comparable because of a different distribution of days of the week, Sundays and holidays, within the months.

One of the main objectives sought in calendar revision is to obtain a perpetual calendar, that is, one in which the year will always begin on the same day of the week. A second important objective is to have all years as nearly equal as possible. A third important objective is, of course, to have the average length of the calendar year as nearly as possible equal to the tropical year, so that dates of the calendar year will not drift with reference to the seasons.

The first of the above objectives could be obtained in a wide variety of ways, most of which, however, are precluded by one or both of the other two objectives. For example, the calendar could be made perpetual by

making the year contain 364 days, or 52 complete weeks with no remainder. This would also make all calendar years equal. The plan, however, would be seriously defective in that there would be an accumulating excess of 1.2422 days per year which would violate the third important objective mentioned above. That is, there would be a drift of calendar dates with reference to the seasons, so that in the course of some 175 years July 4 and "summer" vacation would fall in the dead of winter. This plan, therefore, could hardly be accepted as a satisfactory solution.

Again, the 1.2422 days per year in excess of 364 days, or 52 weeks could be allowed to accumulate over several years until the excess amounted to a full week. This could then be added at the end of the year, thus giving to that year 371 days, or 53 weeks, instead of the usual 52. This extra week would be added, on the average, every 5.6352 years. That is, it would be added every five or six years according to some regular arrangement.

An arrangement that would be nearly exact would be to add 11 extra weeks in a period of 62 years. These 11 weeks could be distributed through the 62-year period by inserting a week after each five-year or six-year period as follows: 5, 6, 6, 5, 6, 6, 5, 6, 6, 5, 6. The 11 extra weeks thus inserted in a period of 62 years would be equivalent to 77 days, whereas the actual excess over 52 weeks per year, in 62 years, would be 1.2422 x 62, or 77.0164 days. The total of the 11 extra weeks in 62 years is, therefore, shorter than the actual excess accumulated in 62 years by 0.0164 day. This error amounts to one day in about 3,800 years. A leap-year rule based on this arrangement would be somewhat more exact than our present leap-year rule under the Gregorian calendar.

The plan of allowing the excess to accumulate and then adding an extra week every five or six years cannot, therefore, be objected to on the ground that it is inaccurate. The plan is, however, open to serious objection on the ground that successive years would not be equal and comparable. Every fifth or sixth year would be longer than the normal year by a full week or by nearly 2 per cent. This plan, therefore, fails to attain the second important objective mentioned at an earlier point in this paper. That is, it fails to make all years equal and comparable.

Some of the inconveniences and disadvantages that would result from the use of a calendar in which the years are so seriously unequal can readily be appreciated. For example, consider production and sales statistics, operating costs, rents, salaries, interest payments, profit and loss statements, and all other business matters that are handled on an annual basis. Under such a calendar all figures on an annual basis would be subject to "adjustment" between "long" years and "short" years in order to make the figures comparable. While, admittedly, the adjustment could be made, it would be an insufferable and unnecessary nuisance since a far better plan is readily available in The World Calendar under which

such adjustment would seldom be necessary, and even when necessary would be for only one day in 365, instead of for one week in 52. On that basis The World Calendar plan is seven times as good as the "accumulated week" plan. As a matter of fact, the practical advantage of The World Calendar plan is much greater than seven to one, since under it for most purposes no adjustment whatever would be necessary.

Objections to the "accumulated week" plan of calendar revision could be multiplied almost indefinitely. For example, consider the inconveniences that would arise from having a month containing an extra week every five or six years. How would the worker on an annual or monthly salary pay the extra week's expenses? Consider the farmer, who is concerned with dates of seed-time and harvest. These would be thrown out of line by the extra week. Consider the astronomer, who is concerned with the relative positions of the heavenly bodies on a given date; the dates of the equinoxes, solstices, eclipses, etc.; the time of sunrise and sunset on a given date. The dates and times of all these events would be directly and seriously affected by the insertion of an extra week from time to time.

What of school schedules, vacations and holidays? Would schools continue for an extra week during the "long" year? If so, what about the teacher's pay for the extra week? What about national events and personal anniversaries which occur during the extra week, are these to be ignored during the greater number of "short" years?

All in all the plan of calendar revision on the basis of the "accumulated week" idea seems so inconvenient, clumsy, and generally undesirable, that its acceptance cannot be given serious consideration. The single fact that it does not meet the basic requirement of making corresponding periods directly comparable is enough to condemn it. Its acceptance would, in effect, be putting calendar revision back some 2,000 years to the pre-Julian days when the year contained 12 months of 30 days each, with an extra month intercalated at irregular intervals to make up the accumulated shortage. If we have not progressed beyond that point in 2,000 years, we had best leave the calendar as it is at present.

NEW ARGENTINE CHAIRMAN

THE ARGENTINE COMMITTEE for The World Calendar has recently nominated to its chairmanship Rear Admiral Jose Guisasola, Director of the Naval War College. He is a distinguished naval officer and his appointment will insure the continuation of the fine work of this important Latin-American committee.

Rear Admiral Guisasola succeeds Dr. C. D. Perrine, Director of the Cordoba Observatory, one of the world's outstanding men of science, who is retiring from the committee because of ill health. From time to time Dr. Perrine has had to relinquish an increasing number of his activities for calendar reform, which have been carried on most ably by Father Juan V. Monticelli, S.S., Vice Chairman of the Argentine Committee. The committee also has a new councilor in the person of Señor Juan O. Mariotti of Buenos Aires.

TIME IN BIBLE TIMES

By CHARLES FRANCIS POTTER

Author of *The Story of Religion* and *Is That in the Bible*

YOU MOVE into a different time-world from ours when you open your Bible. You find yourself in a much more leisurely atmosphere, where exact time-measurements are unknown and the calendar a very casual affair. A modern city-dweller, living in this mechanized age when minutes are important and when speed contests and radio have accustomed us to split-second timing, is surprised to learn that the words "minute" and "second" are not found anywhere in the Bible. The patriarchs of the Old Testament and even the disciples of Jesus were time-wealthy and had no use for such small change. When hours, days, weeks, months and years are mentioned in the Scriptures, they seldom correspond exactly to our divisions of time with the same names.

Neither the word "calendar" nor the word "clock" is used in the Bible. Only one sun-dial is mentioned, and that belonged to a king. It was on this dial of King Ahaz that the prophet Isaiah is said to have caused the shadow to move backward 10 degrees as a sign to King Hezekiah. The story itself bears eloquent testimony to the naive ideas about time which then prevailed. Nobody in Isaiah's day realized that the earth would have to reverse its motion if the shadow on the dial were to move backward. No one even dreamed that the result of such a reversal, had it really occurred, would have been a tidal wave that would have wiped Isaiah, King Hezekiah, the sun-dial, and all the inhabitants of Palestine out of existence!

Today "time marches on" inevitably by regular measured steps, but in Bible days, for all that even the wisest men knew, time might loiter, stop altogether, or even go backward. There was nothing incongruous to them in the thought of Joshua commanding the sun to stand still until Israel was avenged of her enemies. They were blissfully unaware of the catastrophe to the whole solar system which would have ensued.

Indeed, the very idea of measuring time with precision was quite foreign to the ancient oriental mind. In dating an event, exactness did not matter. Again and again we read, "In the process of time it came to pass," or "After a time he returned," or "When he had been there a long time." The great life-spans attributed to the patriarchs, sometimes over 900 years, show another example of carelessness of time-measurement. Probably we should drop a cipher to get the correct age. Otherwise we strain our credulity to believe that Noah was 500 years old when he "begat Shem, Ham and Japheth."

The concept of time itself, in an abstract sense, was very vague in the minds of those who wrote the Bible. Certainly the translators have had

their troubles in trying to make intelligible to us the peculiar ideas of time and duration of time which they found in the Hebrew and Aramaic and Greek originals. Young's *Concordance* lists 16 different words—10 Hebrew and six Greek—which are translated "time" or "times."

The word "hour" does not occur in the Old Testament until we come to the Book of Daniel, one of the last books written, and the only reason we find it in Daniel is because of a poor translation. The ancient Jews never thought in terms of hours. In the five places in Daniel where our Bibles have the word "hour," the Aramaic word so translated is "shaah," which means literally "look" or "glance" and should have been rendered "moment" or "in the twinkling of an eye."

For instance, in the King James version, Daniel 3:6 reads: "And whoso falleth not down and worshippeth shall the same hour be cast into the midst of a burning fiery furnace." In Dr. Moffatt's new translation, in place of "the same hour," the word "instantly" is correctly used.

When we come to the New Testament we find the word "hour" often enough, but it is not the hour that we now know. The length of time it indicates varies greatly. It may refer to an instant, to 45 minutes, an hour, an hour and a quarter, a period of three hours, a day, or even a season!

The reason for these strange variations is the fact that during the time when the New Testament was being written, the word "hour" was in the process of evolution. It was still in a fluid state. Various meanings of the word were contending with each other for popular acceptance. Greek, Roman and Jewish ideas of time-measurement were prevalent in Palestine at the same time.

The word "hour" comes from the Greek word "hora." The "Horae" were the three mythological goddesses of the seasons—spring, summer and winter. This was before autumn was recognized as a season. Their names were Eunomia, Dike and Eirene, meaning Good Order, Justice and Peace, guardians of the orderly succession of the processes of nature.

"Hora" therefore meant "season" in a very general sense, almost synonymous with "a time." It was simply a measurable lapse of time with a beginning and an end but with no uniform length of duration. That ancient Greek meaning of the word persisted into New Testament times even after "hora" came to be used also to mean a division of the day. Consequently, when the translators came across the word "hora," they found it very difficult to determine what English word to use.

Several times they translated "hora" as "day"; several other times they rendered it "season," and they were correct in so doing. But in some verses where "hora" should have been translated "moment" or "instant," they rendered it "hour."

Even in the many places in the New Testament where the word "hora" is used to indicate a period of time somewhat corresponding to our modern

hour, it should be understood by the Bible reader that the New Testament hour varied greatly in length.

There were astronomers then, to be sure, who had carefully worked out the exact length of the day from their observation of the stars and the equinoxes, and had divided the day into 24 equal parts or hours, like the ones we use today. These they measured by a clever mechanical device which they called the clepsydra, literally the water-stealer, a primitive forerunner of the clock.

But the common people of New Testament times, in their homes and in business, knew nothing of the day of 24 equal hours. To them the day was the period between sunrise and sunset, and that was divided into 12 equal parts called hours. Of course, the hours were therefore much longer in summer than in winter. In midwinter their hour was equal to only three-fourths of one of our hours and in midsummer was as long as our hour and a quarter. But in their leisurely method of living, they did not worry about such small matters.

Practically, too, Jesus' contemporaries did not even bother very much with separate hours. They used mostly the third, sixth and ninth hours, meaning mid-forenoon, noon and mid-afternoon. As a matter of fact, the first, second, fourth, fifth, eighth and 12th hours are never mentioned in the New Testament at all. The 11th hour is referred to twice, but in the same story; and the seventh and tenth hours are mentioned but once each. And in half the places where any hour is mentioned, it is prefaced by the word "about." "About the ninth hour" is a common phrase, and meant evidently "along some time in the afternoon."

The night was divided into watches. In Old Testament times there were three—the evening watch, the middle watch and the morning watch. That usage carried over into the New Testament, but the Roman four-watch night was also coming into use. There is an interesting example in Mark 13:35, where all four watches are named, "Watch ye therefore: for ye know not when the master of the house cometh, at even, or at midnight, or at the cockcrowing, or in the morning."

The week is not very important in the Bible. It is mentioned only 26 times, while the month is referred to 250 times, the year 834 times and the day 2,352 times. You would think that the week would be important, because it was popularly supposed that the seven-day week was ordained by Jehovah himself when he created the world in six days and rested on the seventh, thus establishing the Sabbath. But it is extremely probable that the Jews adopted the seven-day week, including the Sabbath, from the Babylonians, who probably got it from the four phases of the moon. Scholars are inclined to think that the Hebrew week was not derived from the Creation narrative, but vice versa.

In the Old Testament, the word for week is "shabua," from "sheba," the Hebrew word for seven. In the New Testament, it is "sabbaton" or "sabbata," meaning "from Sabbath to Sabbath." The days of the week were not named like our Sunday, Monday, et cetera, but were numbered, save the seventh, the Sabbath. Since the week was also named the sabbath, there is some confusion in certain passages. The afternoon of the sixth day (our Friday afternoon) had a name of its own, "the preparation," since at that time the Jews were preparing for the Sabbath. Our Sunday was known as "the morrow after the Sabbath" or as "the first day of the week" until the very end of the Bible, where we find the first use of a new name for it which later became very popular in the apostolic Christian Church. In Revelation 1:10 the author says, "I was in the Spirit on the Lord's day." Even today many Christians prefer that name to Sunday, which they consider an unwarranted concession to heathen sun-worship. It was on "the first day of the week" that the Bible says that Jesus rose from the dead, so that day was chosen as particularly His.

The Hebrew word for month was "chodesh," which literally meant "new moon," and was used because the month extended from one new moon to the next. It is difficult for the amateur student of the Bible to know just what time of year is meant when any month is mentioned, because there were in the Bible three different ways of designating

the months—two sets of month-names besides the use of numbers. And even when numbers were used, the first month was not our January, but the latter part of March and the first part of April. Still further to confuse the student, the first month of the sacred year was the seventh month of the civil year.

The oldest set of month-names used in the Bible was of Canaanite origin, and agricultural in character. Only four of these are mentioned. Abib, which means sprouting or budding, was the first month, and began with the new moon of March or April. It was the month of the spring equinox and was traditionally the time when the Jews came out of Egypt—the Passover time, or our Easter. It is mentioned four times in Exodus and twice in Deuteronomy.

Zif, the second month, was the month of flowering, and is mentioned twice in First Kings. Ethanim, the seventh month, named only once, in First Kings, means "perennial" and was so named because it was the dry month, corresponding to our September-October, when only the never-failing springs and streams flowed. Bul, the eighth month, also mentioned only once, in First Kings, was named for the ancient rain-god of the Canaanites, because in that month the fall drouth ended and the rains came.

When the Jews went into the Babylonian exile in the Sixth Century B.C., they dropped the old names for the months and used numbers, but when they returned from the exile, they brought back with them the Babylonian month-names.

It was no longer Abib, or the first month, but Nisan, named for the Babylonian god of spring. One would have thought that the priests of Jehovah would have resented that. Then followed in order Iyyar, Sivan, Tammuz, Ab, Elul, Tishri, Marcheshvan, Kislev, Tebeth, Shebat and Adar. Of these 12 names, only seven are mentioned in the Bible—Nisan, Sivan, Elul, Kislev, Tebeth, Shebat and Adar.

The Hebrew year, or "shanah," was thus made up of 12 lunar months, but since the month, from new moon to new moon, was only 29½ days, the lunar year contained only 354 days, and some sort of intercalation was necessary to bring it into line with the solar year of 365¼ days. This was done by occasionally adding an extra month after the last month, Adar (February-March), and this extra month was named We-Adar, or Second Adar. The Babylonian cycle of introducing the intercalary month seven times in 19 years was adopted, but the calculating became so complicated that ordinary people simply accepted the official figures announced by the Sanhedrin, or Great Council.

Of course, in New Testament times the Roman influence brought the Julian calendar to the attention of the Jews and Christians, but the old customs continued to prevail in Palestine. It seemed a betrayal of their religion for Jews to accept the Roman calendar, and the non-Jewish Christians adapted themselves to the situation as best they could. There is no evidence in the New Testament that the Julian calendar had been adopted by Christians.

The old Jewish calendar of Bible days with its lunar year and complicated intercalation is still in use today as the sacred calendar of the synagogues, although the modern Jew perforce uses the Gregorian calendar in his business affairs.

It would be a great step forward if both Jews and Christians were to adopt the proposed perpetual World Calendar of equal quarters, and relocate their holy days accordingly.

AS SEEN IN CANADA

By Lt.-Col. J. Murray Muir

Secretary, Rational Calendar Association of Canada

WHILE the continued threats and final outbreak of war during the past year have diverted the attention of governments from constructive issues, the world-wide interest in calendar reform has not been lessened. Rather has the movement been gaining in strength, particularly in the English-speaking countries and in France. From evidence in the form of reports of governments, international organizations and representative committees all over the world, the favoring of a moderate reform of the calendar is indisputable.

A review of progress in calendar reform during the past two decades marks 1937 as perhaps the most important year. In that year the Council of the League of Nations unanimously approved the submittal of a moderate and practical plan for revision, based on the features of The World Calendar of 12 months and equal quarters, to its States Members as well as to non-member States. The draft Treaty envisaged the adoption of the revised calendar on January 1, 1939, subject, of course, to the approval of an international conference. Subsequently, 14 governments accepted the plan, six definitely opposed it, nine offered no remarks, nine could not define their attitude for the moment, and seven considered the reform premature. From these reactions the League of Nations Committee, while still affirming its belief that the social and economic advantages to be derived from the reform were "incontestable," recommended postponement of consideration of the question for the time being.

Of considerable importance, too, was the observation of the Uruguayan representative on the League's Communications Committee in 1937, to the effect that the Vatican, far from closing its door to reform, was holding it open. The indications of today are that liturgical circles in the Vatican are very much alive to the fact that the 358-year-old Gregorian calendar calls for a revision to adapt it to modern needs.

A gratifying result of the growing and widespread interest in The World Calendar is the increasing and sympathetic support of the Press of all countries. In this connection the daily and weekly newspapers, the national magazines and business periodicals published in Canada have generously contributed space to the various aspects of, and the need for calendar reform, as well as the advantages of The World Calendar.

Owing to the European war and its attendant effects upon non-belligerent as well as belligerent countries, all questions, except those relating to peace and war, finance and economics, have been relegated to the background, as far as official action is concerned.

The task of bringing nearer the friendly international discussion which will be necessary to secure the adoption of The World Calendar rests on those who appreciate the values of such a movement and the bearing it may have on the more important issue of promoting harmonious relations between nations. In this task the Rational Calendar Association of Canada, in company with its affiliated Association in Great Britain and similar organizations and committees through the world, will continue to take every opportunity to impress on representative bodies the desirability of keeping their governments alive to the need for calendar change.

Individual members of the Rational Calendar Association of Canada can add tremendous force to this work by their own efforts in pressing the demand for reform upon their Members of Parliament, by instigating corporate bodies of which they are members to pass resolutions in favor of calendar reform, and by giving publicity to their own ideas on the subject through letters to the Press.

In answer to the frequently asked question as to how and when The World Calendar can conveniently and without interruption be put into operation, the following extract from a recent address given by Miss Elisabeth Achelis, President of The World Calendar Association, New York City, is given: "It (the adoption of The World Calendar) can be accomplished by the calling of an international conference by one great power . . . or by several smaller nations working concertedly together, by 1943, earlier if possible. Concerted action and the drafting of a treaty at such an international conference would then be ratified by the various governments and The World Calendar would be put into operation on the last day of December, 1944. It is on the last day of *that* year, when December 31 falls on Sunday in the old calendar, that it can be transformed into the Year-End Day of the new calendar, by which The World Calendar can be put into operation on the next day, *Sunday, January 1, 1945.*"

"This year's financial calendar which contains two Easters (April 9, 1939, and March 24, 1940)," states the *Financial Times*, London, England, "provides a strong weapon of argument for calendar reform and a fixed Easter." "All companies and corporations," the item continues, "when accounts are made up to March 31, will have difficulty in comparing their current year's figures with those of a year ago."

With the recent formation of calendar reform committees in Australia and Yugoslavia, the international organizations working on behalf of this movement now total 35. The former, which embraces New Zealand as well as Australia, has its headquarters in Canberra, Australia, while the latter is located in Belgrade, Yugoslavia.

In May, 1939, the General Federation of Women's Clubs in the United States, meeting in San Francisco, passed a resolution endorsing The World Calendar as a needed reform, and requesting the Government of the United States to cooperate with other governments in making The World Calendar internationally operative. In a preliminary report of a committee of the International Statistical Institute, in 1937, Dr. H. Platzer reviews the progress toward calendar reform and recommends that the Institute's committee continue to study the question, with particular reference to the effects of calendar irregularities on statistical compilations.

A COMMON-SENSE CALENDAR

By ELISABETH ACHELIS

President, The World Calendar Association

Text of a broadcast over Station WFAS, White Plains, New York, April 14, 1940

WHEN we speak of a new calendar we cannot escape the appeal the familiar 12-month calendar has for us all. The convenience of quarter and half-year divisions, and the close parallel these have to the four seasons are too fundamental lightly to be discarded.

Blazing the trail for a much-needed new calendar, a group of pioneers, headed by the late George Eastman of Rochester, awakened the public to the defects of our present one and aroused the realization that something ought to be done about it.

The awkward and irregular calendar in use today is outmoded in our age of progress. The calendar in its irregularities and haphazard shifting no longer serves our every-day needs.

Just consider for a moment the annoyances we are annually experiencing with our Thanksgiving Day coming on either the fourth or fifth Thursday in November, which our President attempted to improve without success by proclaiming it for the third or fourth Thursday. A definite day, the fourth Thursday or the fourth Monday even, would eliminate the present confusion and difficulty.

Washington's Birthday also and the Fourth of July, too, wander incessantly throughout the week, so that we never know from one year to the next on what weekdays these important national holidays will fall: whether on a day making possible a long week-end or on a Wednesday or Thursday breaking awkwardly into the middle of the week, which satisfies no one. The manner in which our holidays shift is always confusing, especially so when we plan vacations with our families. Yet obviously, no holiday can be fixed as to day and date without *first* establishing a *perpetual* calendar, which is every year the same.

The business world, too, is seriously inconvenienced. Having sometimes four, sometimes five Mondays or Fridays in a month is a difficulty which upsets production, earnings, wages and reports. Likewise our quarter and half-years are actually not equal in length. They vary from two to three days.

The group headed by George Eastman suggested a perpetual calendar of 13 months. This had a novel appeal for the reason of its complete change from the familiar 12. It also received a certain response from statisticians because of the precise nature of 13 months of four weeks and 28 days each—a rather monotonous arrangement. It gained quite a fol-

lowing at first, but it failed to hold the ground its novelty had won. Anything so radical was too upsetting for popular favor. Even when it was tried, it just somehow did not work as anticipated.

In a recent statement made in the press, Sears, Roebuck and Company, after a period of 10 years of trial and experiment, has given up the 13-period system in its reporting of sales. It found that the custom among business accountants of considering statistics on a 12-month basis was too deeply rooted and convenient to be abandoned, and the public, too, clung to the familiar 12 months, for to them a four-week period did not somehow seem a complete month. The company also found a lack of cooperation from other firms in the business world. In its *internal* accounting system, however, the company is retaining a 13-period method. With the defects in our present calendar, such a system eases, in part, some of the difficulties which the business world is encountering.

Here is proof that when a change is made from one order to another we cannot adopt a new plan without careful thought. It is hazardous to swing to extremes: from the old way to a drastic and radically new one.

Common-sense advocates the middle way. It is tolerant to both old and new. Thus it creates a happy balance between the two and achieves the temperate point of view more likely to succeed.

Such a common-sense revision is that of The World Calendar of 12 months and equal quarters. It retains the best feature of the outmoded present calendar—namely, the 12-month year with its handy quarter and half-year divisions. It is also liberal in accepting a completely *new* feature—namely, the one or two "intercalary" days which are required to make any civil calendar perpetual—every year the same. Thus it *respects* the past, *considers* the present and *provides* for the future.

This common-sense change is the answer to our modern need for bringing the calendar up to date. The months are more equally apportioned, quarter and half-years are equalized, days and dates agree with each other, and the one or two new days make it perpetual so that each year is completely comparable with other years.

Now as to its more detailed arrangement:

Each quarter-year is given 91 days or 13 weeks or three months corresponding to the seasons. Each quarter begins on a Sunday and ends on a Saturday. No discrimination is shown the day, week or month. They are all considered on the same equal basis, giving the new calendar a desirable equality, an order and stability, quite unknown in the one we are now using.

This is possible because the first month in each of the four quarters has 31 days, the remaining second and third month each have 30, whereby a pleasing variety is achieved without sacrificing the newly gained order and stability.

And to keep the calendar true with the seasonal year, the 365th day is placed at the end of the last quarter as an extra Saturday, called "Year-End Day." It is designed as a *World-Holiday* and dated either December Y (for Year-End) or December 31.

Each year the perpetual World Calendar brings this new "gift" day to the world. On this *World-Holiday,* nations and peoples of whatever race and creed can unite in fostering better cooperation and friendship throughout the world.

And in leap years, the 366th day, known as "Leap-Year Day," is another *World-Holiday,* placed on another extra Saturday in midsummer, immediately after June 30. It is placed here to keep the calendar accurately balanced. It is dated June L (for Leap-Year) or June 31. New Years Day, January 1, since it begins the first quarter, naturally falls on a Sunday.

One of the advantages of this new calendar is the ease with which it can be used in business. The four time-units—the day, week, month and quarter—always end simultaneously at the close of each quarter. Because of this, pay-days, the preparation of financial budgets and all other commercial activities are simplified. Days and dates always agree with each other. Pay-days recur on the same day and date, year after year. And, in addition, the familiar arrangement of having 12 monthly payments a year is not lost.

The simple fact that the four dates for the annual Federal Income Tax payments always fall on the last full business day of the week, Friday, is in itself a recommendation. It lightens the task of both people and government.

The year 1945 is the nearest time when The World Calendar can be put into active operation easily. The last day of the preceding year, 1944, falls on Sunday, December 31. By considering that day as "Year-End Day," placed on an extra Saturday, the new *World-Holiday,* our calendar would read like this: December 30, 1944, would be Saturday in both the present and the new calendars. The next day, being the old Sunday, December 31, would become "Year-End Day," an extra Saturday. The following day would be Sunday, January 1, 1945, under the new calendar. Could any change from old to new be simpler and easier than this?

Reforms in the past brought improvements and accuracy into the calendar. Following in their footsteps the new World Calendar of today would bring order, equality and stability into our modern lives and activities.

The World Calendar of 12 months and equal quarters has been approved by 14 nations. It has been endorsed by many international and national organizations, such as the American Association for the Advancement of Science; State and City Chambers of Commerce in the United

States, as well as the influential British and Empire Chambers of Great Britain; the General Federation of Women's Clubs here; and the Labor Conference of American States held at Santiago, Chile, in 1936.

The mention of Chile is most fitting for today, April 14, is the Golden Anniversary of the Pan American Union in Washington. Many of the nations which constitute the Pan American Union are interested in this new calendar. Six have officially approved it and almost all have active calendar committees. The Director-General of the Union, Dr. Rowe, has been interested for many years and is a member of long standing in The World Calendar Association.

The Eastern Hemisphere is unhappily in a state of war and confusion. May we not hope, then, that the nations of this Western Hemisphere—the United States with the other American countries—may offer The World Calendar as one of the contributions to a greater world harmony?

It is in days of spiritual and material stress that men and women are most ready to turn to causes which remove unsatisfactory and discordant conditions and invite better days.

Robert Bridges, the late Poet Laureate of England, with keen insight wrote: "Our stability is but balance." With the adoption by 1945 of the common-sense World Calendar, a door would be opened for a greater balance and stability to be established in the world.

CALENDAR PICTURES AT THE PLANETARIUM

By Professor William H. Barton, Jr.

Executive Curator, Hayden Planetarium, New York City

EIGHTEEN oil paintings telling the story of the various calendars worked out by man for the systematic ordering of his life and activities have been placed on exhibition in the Hayden Planetarium of the American Museum of Natural History in connection with the September presentation of "Sky Clocks and Calendars."

These vivid and interesting paintings supplement the showing in the artificial Planetarium sky of how man always has been and always will be dependent on the movement of the heavenly bodies for an accurate reckoning of the years, the seasons, the months, days and hours.

The pictures trace the development of the calendar through the ages from the day of the lunar calendar to the modern proposal to adopt a perpetual World Calendar which will substitute a uniform year of equally divided time-units for the varying inequalities of the present Gregorian system.

These paintings were executed by artists of the New York Museum of Science and Industry for The World Calendar Association. Slides made from the paintings are being incorporated in a World Calendar exhibit at the Museum in Rockefeller Center.

EMPEROR AND POPE

By George Kent

BY means of the Time Machine, the two great men of calendar reform, Julius Caesar and Pope Gregory XIII, meet in New York City and inspect the wonders of the 20th Century. They are standing atop the Empire State Building talking quietly as the reporter tiptoes to within earshot and begins taking notes of their conversation:

CAESAR: It's a great place for a visit, but I don't think I'd like to live here.

GREGORY: I'm not so sure. That thing they call radio, for example. Think of being able to talk to millions—one man's voice heard around the world. What influence! I'd put up with the noise and the smells if I could have it.

CAESAR: Don't get me wrong. They've accomplished miracles. How long did it take me to get to England back in the year 55? With a plane, I could get there in a few hours. But. . . .

GREGORY: And how they have learned to cure people of smallpox and plague and all the maladies that used to kill us off by the thousands!

CAESAR: Yes, it's true, Greg, old boy, but. . . .

GREGORY: The babies come into the world robust and hearty, and they *live*, all senses keen, their minds alert. In my day, only the fortunate and those who were exceptionally strong survived.

CAESAR: Will you listen to me? You're just a child comparatively—compared to me, I mean. And being young, you're naturally inclined to be optimistic. How about the calendar?

GREGORY: Well, I'll tell you.

CAESAR: *I'll tell you.* When I was running things back in Rome, I took a look at the calendar one day and saw it was cock-eyed. "A calendar to be worth anything has to go by the sun," I said. So I fixed it up and, by Jupiter, it was a good job—and it lasted.

GREGORY: Yes, you did, Julius, even if you were a little off in your calculations. By the time I got hold of things, your year was ten days off, and it cost me plenty of gray hairs before I adjusted it to run as it should.

CAESAR: I'm not denying it. What I'm saying is that I fixed up the calendar, and you fixed up the calendar—and now look at it. It just doesn't fit in this century. These people build airplanes, radios. But for some crazy reason, they leave the calendar alone.

GREGORY: I made the same observation. It's incongruous. Perhaps the fault is ours. We could have arranged the sequence of days and months with some kind of symmetry.

CAESAR: Tosh! One man can't think of everything.

GREGORY: It would have been better, though. Think of the troubles they have because of their inertia, their failure to pace the year in time to their speedy and complex lives.

CAESAR: Look at their Easter, one of their great feast-days. *You* might have done something about it. *You* had Easter. All we had in Ancient Rome was a great Spring festival. Anyhow, Easter hops about the calendar like a hunted hare and no one knows from one year to the next on what day it will fall, even though trade and the exchange of vast quantities of gold are involved.

GREGORY: No day in the calendar is secure. In our day it did not matter so much, but now a man never knows on what weekday his birthday will fall, on what day an important assembly will meet.

CAESAR: I'll tell one. They pay taxes quarterly on the 15th day of March, June, September, December. This day falls on a different day of the week, each year, and sometimes it falls on a Sunday, which is their Sabbath, as you know, and all the people rest. So, a special announcement has to be made, informing the taxpayers that they have until the night of the following day, Monday, in which to pay. Cock-eyed!

GREGORY: How much better it will be when The World Calendar is adopted!

CAESAR: World Calendar? Never heard of it.

GREGORY: When that is adopted, as I was saying before you made your last crass statement. . . .

CAESAR: Crass my eye. If you weren't so young in our world's history, I would. . . .

GREGORY: Gently, my son, do not let us quarrel, Julius. This is a pleasure trip.

CAESAR: Yes, you are right. What were you saying?

GREGORY: Well, in The World Calendar, the weekday is tied permanently to the month-day. The 15th of the quarter months of March, June, and so on, falls on a Friday. And Friday, being the day on which most of the people receive their wages, is a most convenient day on which to pay the tax. (Thank heavens, *I* don't have to worry about taxes.)

CAESAR: You mean that they're actually getting up the courage to make a change?

GREGORY: And a mighty good change, too. We should have thought of it ourselves—you and I. A lot of nations have approved it, and many important groups of thoughtful men and women in the United States and other countries are going on record as favoring a change. I think its adoption is only a question of a few years.

CAESAR: Let's have it. What's it all about?

GREGORY: It's simple, as plain as the nose on your face.

CAESAR: Keep my nose out of it.

GREGORY: It involves first a shifting of six days only. Think of it as compared to my dropping ten days! February will have 30 days, March 30. April will get 31, May 30, and finally December offers its last day as a World-Holiday.

CAESAR: Where does that get you?

GREGORY: It gets you, to use your crude locution, a year with four quarters that are identical. Each has 91 days and each begins on a Sunday and ends on a Saturday. So too, the year begins on a Sunday and ends on a Saturday.

CAESAR: Something's not quite straight here. You say each quarter has 91 days. Heck, that gives you a year of 364 days. You're one day shy, Greg, old thing.

GREGORY: Oh, that's taken care of by an intercalary day—a day on a double weekday with a special name. It comes at the end of the year and will be called *Year-End Day* and be devoted to prayers and festivities in all nations in all corners of the world to celebrate peace. Peace Day, it may eventually be called.

CAESAR: A lot these people know about peace. How about Leap Year?

GREGORY: That calls for another intercalary day which will be inserted between the last day of June and the first day of July, in the middle of the year.

CAESAR: Will that also be devoted to peace?

GREGORY: That is yet to be decided.

CAESAR: At that, the idea has possibilities. This calendar won't change from year to year; every feast-day will be fixed. People will be able to do some planning, knowing where dates will fall. The statisticians will be able to make more accurate comparisons. Everything will be a lot simpler. Why didn't I think of it, darn it!

GREGORY: Hush! Once a soldier, always a soldier.

CAESAR: But this World Calendar is perfect, exactly what these moderns need. I can think of a thousand advantages. The day of the week for the first time will be recorded and known, with the date and month and year. It's that easy.

GREGORY: Yes, it is. All annual events will be simple to plan in advance, church festivals as well as sporting and cultural events. Week-ends will be fuller and longer because under the new arrangement, more holidays will fall on a Monday and so, business men and women will have not only Saturday and Sunday, but Monday as well.

CAESAR: I see an even more convincing reason for welcoming this greatest of all calendars. . . .

GREGORY: Speak up, what is it?

CAESAR: It may seem a trifle out of keeping for me, a military man, to

talk this way. But long ago, I saw the hollowness of war and its so-called glories. I want no more of it. The world needs friendship, bonds that will link nation to nation in amity, spiritual and cultural ties. If we could increase the number of such ties, multiply those that exist a thousandfold, then perhaps we will have forged a chain that will hold fast against the forces that would rip them apart in the explosions of war.

GREGORY: Noble Caesar. And you feel that the calendar is one such tie, a force that can unite nations in such amity?

CAESAR: Yes, that's it. I'm for The World Calendar, and how about you?

GREGORY: I am just thinking and hoping that my successor will think as you and I do.

CAESAR: And wouldn't it be great if the leader of this vast western country would take a hand toward finishing what we two began?

Static rumbles in the Time Machine, and Julius Caesar and Pope Gregory fade away from the roof of the Empire State Building, leaving the reporter oblivious to the chilliness of the night air. "By Jove, I have had a glimpse of better and more stable days to come." Then silently he wanders to the elevator.

STATISTICS AND THE CALENDAR

The Board of Trade Journal, London, February, 1940

EDITOR'S NOTE: This interesting example of the complexities of matching years and their sales records is significantly featured in the British Government's official trade paper.

IN COMPARING sales figures for individual concerns with the published results, it should be remembered that retailers use a variety of accounting periods and also that the number of selling days in any calendar month varies from year to year. Returns have, therefore, to be adjusted to some extent in order to render the sales for 1938 and 1939 comparable when combined into districts or other totals. Almost all contributors now report regularly the number of days on which selling took place in their shops during the period to which their figures relate. On each return, therefore, the 1938 sales are corrected, where necessary, by the appropriate amount to make them comparable with 1939 so far as length of period is concerned. The number of selling days in the calendar month of December was one less in 1939 than in 1938, and accordingly corrections for differences in length of period were necessary on a number of schedules.

ODDITIES OF TIME MEASURES

By P. W. Wilson

From *Science Digest*, April, 1939

WAYS of measuring time are as numerous as they are picturesque. An American Indian would say that he was so many "winters" old or so many "snows." He would travel on a journey for so many "sleeps." Swedish peasants talk of the "rye-harvest" or the "potato-harvest" and, in Korea, the ripening of cucumbers has provided a rough and ready almanac. The Butaks of Sumatra measure time by intervals between smallpox epidemics.

The calendar has depended on four celestial bodies—the sun, the star, the moon and the earth itself. The rotation of the earth around the sun gives the year, the position of a star in the heavens (for instance, Sirius in Egypt) suggests a point in time from which to measure the year, the rotation of the moon around the earth gives the month, and the spin of the earth on its axis gives the day.

What primeval man noticed was the new moon. The question that he asked was how long a period of time would elapse before there was another new moon. In his elementary way he was thus calculating what we call the synodic month.

It is not so very difficult to understand the synodic month. Let us take a moment when the sun, the earth, and the moon are in the same plane. Then let us watch until these three are again in exactly the same relative positions—all of them in the same line as before. If we reckon up the interval that has elapsed between these two alignments, we shall find it has been 29.53059 days—that is, 29 days, 12 hours, 44 minutes, 29 seconds. This is the synodic month.

The synodic month is about two days longer than the other months. The moon proceeds on its minor orbit. But the earth also moves on its major orbit. The moon has thus to traverse more than 360 degrees around the world before it reaches a point of alignment with the sun. It takes the moon the extra two days to catch up with the advance of the earth.

The deeper we plunge into the past, the more numerous were the calendars. In Babylon, 4,500 years ago, there appear to have been local calendars corresponding to local dialects. In classical Greece more than a hundred calendars have been identified. Time was reckoned by the month as a basic unit, and the month as the word implies was determined according to the phases of the moon. It was with the naked eye that the moon was observed and a new moon—faint in the sky—was not always discerned on the same evening by people in different places. The same calendar might thus be variable in application. And in periods where sacred observances

were regulated according to the calendar, the confusion was regrettable.

A calendar enumerates exact days which we divide into 24 hours. In no calendar is it possible to deal conveniently with fractions of days. Yet there is no precise number of exact days either in the lunar month or in the solar year. A month contains approximately 29½ days. A year contains about 365¼ days. In both cases a fraction intrudes itself.

In widely separated communities the same device has been applied to the adjustment of the lunar month. Six months of the year consisted of 30 days—the other six of 29, so providing for an average of 29½ days—the length of the lunar month. No less simply can the solar year be adjusted. That year consists of 365¼ days. Let it be reckoned as 365 days and let an extra day be added every fourth or leap year.

It is when we try to adjust the lunar month of 29½ days to the solar year of 365¼ days that difficulties arise. Twelve lunar months of 29½ days make a period of 354 days which is 11¼ days short of the solar year, and 13 lunar months make a period of 383½ days.

We can retain the rotation of the earth as a measurement of the day. We can retain the orbit of the sun as a measure of the year. But we can reject the orbit of the moon as a measure of the month. We can arrange months in the year according to our own convenience. In the story of the calendar that verdict of history is reflected. About B.C. 3000 the minds of Babylon and the minds of Egypt came to grips with the same problem of chronometry. The trouble with the Babylonians was that they were conservatives who clung to the lunar month.

No amount of astronomy would alter the fundamental discrepancy between the lunar month and the solar year. There was no way of reconciling this discrepancy save a resort to intercalation, and the intercalations may be described as orgies of irregularity. Before the reign of Darius, the priests advised the king when an extra month was needed and this month was duly inserted. Later, there was an endeavor to regulate the intercalations according to cycles. From B.C. 528 to 505 the cycle was eight years. From 504 to 383 it was 27 years. From 382 onwards, it was 19 years.

At a very early period the Egyptians adopted the solar year. They reckoned that the solar year contained 365 days. The Egyptians adopted 12 equal months of 30 days, and these months accounted for 360 days.

But there remained five days which had still to be accounted for. They were inserted between calendar days. Between the end of one year and the beginning of the next, there was a five-day interval. The five days were the more fully appreciated because they were holidays.

In the Egypt of our own day, the Coptic Christians perpetuate the old Egyptian language in its literature and ritual. The Coptic calendar still consists of 12 months of 30 days, with five extra days to make the year even. The Coptic calendar is used also in Ethiopia.

The solar year is 365¼ days. The Egyptian year was 365 days. The discrepancy, then, was approximately six hours. Gradually it was realized that spring was advancing into summer, and summer into winter. The beginning of the year, which ought to have coincided with the rising of Sirius and the inundation of the Nile, was in fact weeks ahead.

If the Egyptian year and the solar year differed by a slight discrepancy, it follows that, every so often, the two years would work round to agreement. Hence, 1,460 sothic or solar years equalled 1,461 Egyptian years, and this period is known as the Sothic Cycle.

The philosopher and mathematician Censorinus in A.D. 238 compiled a treatise *De Die Natali* which deals with the birth of man, the influence of stars and genii on his destiny, and the measurement of time. It is to Censorinus that we are indebted for one fact of capital importance. In A.D. 139 the first day of the Egyptian calendar, based on 365 days to the civil year, coincided with the heliacal rising of the star Sirius. In other words, in A.D. 139 one Sothic Cycle ended and another began.

The point is that the Egyptian calendar must have been initiated in a year when a Sothic Cycle was beginning—when, that is, New Year's Day coincided with the rising of Sirius. The origination of this calendar could not have been as recent as B.C. 2781.* Hence, it appears to have been at least as ancient as B.C. 4241,* the oldest ascertained date in history.

The axis of the earth, as a spinning top, moves similarly around an imaginary cone. The result of the gyration is an astronomical variation which has a direct bearing on the measurement of time, and especially of long periods. It is known as the Precession of the Equinoxes. More popularly, it means that the North Pole does not always point to any particular star. Pole stars only hold office for a period.

This slow movement within the celestial clock has affected the pyramids and temples of Egypt. The archaeologist has discovered that they were planned according to the points of the compass. But the temples of different dates do not face in quite the same direction, and one of them, Karnak, is slightly out of line with itself. What is the meaning of such an apparent error of which the Egyptians themselves were unconscious?

As we have our Pole Star that determines the north, so had they, nor did they realize that the true north moves slowly in a circle around the stars. It is a gyration that is completed in 25,800 years—a period far exceeding the span of history, yet short enough to serve as a standard for measuring time by centuries and millennia. This movement of the true north—the Precession of the Equinoxes—enables us to estimate the age of the Egyptian edifices that are affected by it.

The Christian Era, as we know it, emerged out of much medieval com-

*EDITOR'S NOTE: In *Time and Its Mysteries*, Professor Breasted has amended these dates to read B.C. 2776 and B.C. 4236.

plexity. The Spaniards had a Christian Era that dated from A.D. 38. In A.D. 1180, the official use of this Spanish Era was abolished by the Council of Tarragona but in Portugal the era continued until the 15th Century. It was in the 15th Century that the Greeks adopted the Christian Era.

In 1518 the famous expedition of Cortes against Mexico was organized. On achieving their conquest the Spaniards were amazed to discover that the Mayans were acquainted with the science of measuring time. Indeed, their chronology agreed precisely with European chronology save for a discrepancy of about ten days. The discrepancy was due to an error, but not in the Mayan calendar. It was the error in the Julian calendar subsequently corrected by Pope Gregory XIII.

The accuracy of the Mayan calendar was due to an even more remarkable circumstance. Their year was the same as the year of the Egyptians, dwelling in the Nile Valley on the other side of the world. In Mexico there were 360 days divided into months, and five extra days that belonged to no month. These days were regarded as unlucky. In those days people hesitated to start on a journey, and to hew wood in forests where wild beasts were a danger. Housewives left the home unswept and made no pottery. Alas for the child born within the five days!

In the year A.D. 1091, the Mexicans had reformed their calendar. Like the Egyptians they had to deal with the quarter of a day in excess of the 365 days which completes the solar year. Apparently they did not intercalate a day every four years as we do. They are believed to have waited for what they called "a bundle" of 52 years—indicated by sheaves of reeds—and then intercalated 13 days or, according to some conjectures, 12½ days—that is, 25 days described as "an old age" of 105 years.

Divisions of the day began long ago to be arranged according to some kind of orderly sequence. The Pyramid Texts show that in Egypt a day of 12 varying hours was observed in the fourth millennium B.C. Babylonians divided the day into six periods and the night into six periods. The origin of the number 60 as applied to minutes within the hour and seconds within the minute is attributed to Egypt.

Unfortunately, solar days of 24 hours are not uniform. Some are longer, others are shorter. Here we encounter one of the most beautiful of all mathematical laws. It is associated with the name of the great astronomer Johann Kepler.

Suppose that a planet is moving around the sun in an elliptic orbit. Sometimes it will be nearer the sun, sometimes further off. When the planet is nearer the sun, then —Kepler showed—it puts on pace. When it is further away from the sun, it slows down. And this is true of the earth. When near the sun it moves more quickly than when it is further off, and this means that strictly solar days and solar hours of the day vary slightly in length.

Another and more subtle correction has to be made. The equator of the earth lies in a plane which is not the plane of the earth's orbit round the sun. This means that when the earth revolves one-twenty-fourth of the daily gyration around its axis, the shadow of the sun does not, as a rule, pass one-twenty-fourth of the way—round the face of the dial.

What is our conclusion? Mean time and solar time accomplish the same year. But solar time is either faster or slower than mean time at all save four dates within the year, and this explains the trouble with the sun-dial. On four days, April 15, June 13, September 1 and December 24, it agrees with the clock. On all other days there is a discrepancy in which the sun-dial is fast or slow. In November the difference attains a maximum of 16 minutes 22 seconds.

INERTIA AS AN OBSTACLE

From the London Churchman

In this article, the editor of the great popular organ of the Church of England declares that progress of calendar reform has been slow because of the inertia of certain nations. The plan most widely favored, he points out, is that known as The World Calendar: "indeed, other proposals may now be regarded as obsolete." Apathy is the present obstacle. The extraordinary effects of apathy among masses of people, leading them to put up with inconveniences which might easily be remedied, are illustrated in this article by a reference to Dickens, who pointed out that the British Treasury continued to use wooden "tallies" for accounting purposes until well into the last century, notwithstanding the invention of pens, paper and slate pencils—in fact, until the accumulation of dried sticks caught fire and burned down the Houses of Parliament.

WITH all deference to Mr. Herbert Spencer and the metaphysicians who tell us that we cannot predicate either limitation or absence of limitation of space and time, mankind must deal with time as something fixed and capable of being recorded and subdivided. Hence calendars.

Our ancestors got their time from the sun and the stars, which served them well enough. Their only way of determining approximately the time of day was by the position of the sun in the daytime and by the position of the stars by night. Instead of asking, "What time is it?" an early Greek might say, "What star is passing?" Alfred the Great had no clocks or watches, but could tell the time of day by means of candles constructed so as to burn approximately for four hours.

The method of keeping time by means of the pendulum clock was given to the world by the young Galileo, who sat in the cathedral at Pisa timing the vibrations of the chandelier which hung from the roof by holding his finger on his pulse when he should have been attending to the services.

Most modern people who live by the clock are unaware of any disagreement between the time of day as announced by the sun and as shown by the clock; but it is only rarely that the two agree. A day may be defined as the interval required for the earth to complete its rotation on its axis. This rotation is determined with reference to an imaginary mean sun, defined so that all the days are of equal length and that such length is equal to the *average* length of the days when the true sun is used as the body of reference. The day, the month and the year are based on earth, moon and sun, and the use of the calendar is to combine these for the purposes of civil and religious life.

Some six thousand years ago the Ancient Egyptians abandoned the moon and took the sun as a more reliable guide, because upon it depended the recurrence of the seasons, regulating the vegetation of the earth. They marked a year of 360 days with five days added to the end, observed as a holiday.

This calendar is still used by the Copts. In 45 B.C. Julius Caesar adopted a civil year of 365 days with an extra day for each fourth year to make up for the additional quarter of a day in the solar year. In 321 A.D. Constantine, converted to Christianity, introduced a new time-unit, the Biblical seven-day week.

For 16 centuries the Julian calendar was in use throughout Europe, but the solar year had been inaccurately calculated, being too long by 11 minutes and 14 seconds. Thus the date of the spring equinox fell earlier and earlier in the year, and it was evident that the calendar moon and the moon of the heavens no longer coincided. Easter was being celebrated too late, and in time would have been kept, one, two, or three months after the astronomical date. Pope Gregory XIII, who introduced the calendar we now use, dropped out 10 days from the month of October, 1582, reckoning October 5 as October 15, his object being to restore the equinox to March 21, the date on which it fell at the time of the Council of Nicaea in 325 A.D.

The extraordinary apathy which leads people to put up with inconveniences which might easily be remedied was humorously noted by Dickens. He instances somewhere the fact that the old exchequer *tallies* were still in use well into the last century notwithstanding the invention of pens, paper and slate pencils until the accumulation of dried sticks caught fire and led to the burning down of the Houses of Parliament.

A convenient summary of the inconveniences of the present calendar may be found in "Dates and Days," a pamphlet issued by the Rational Calendar Association of London. Every year the whole almanac is completely changed. Neither the months, the quarters, nor the half-years are comparable with one another. A month may consist of 28, 29, 30 or 31 days. The first quarter of the year contains 90 days (91 in leap years), the second quarter 91, and the last two quarters 92 days; one half-year is three days longer than the other. The year is not exactly divisible into weeks; dates, therefore, never fall on the same day from year to year. The same month in different years may contain four Sundays or five. In consecutive months the number of weekdays always varies. Sometimes there are 52, sometimes 53 pay-days, sometimes two Easters in the fiscal year, and payments of interest, dividends and rents, and currency of bills of exchange and the terms of legal contracts are greatly complicated by the want of a fixed year. The banks have to use elaborate special tables in order to make accurate calculations in current accounts, and the work of accountants, auditors and Treasury officials is unnecessarily magnified by the universal irregularity. For intelligent social planning, accurate statistics are essential, and an increased uniformity in trade, commerce, sociology and economics is desirable.

Moved by these considerations, a committee of the League of Nations took up the matter in May, 1924, and there have been a number of subsequent discussions; but owing to the inertia of some of the nations, progress has been slow. The plan most favored is known as The World Calendar; indeed, other suggestions may be regarded as obsolete.

Under this proposal there would be a "Perpetual Calendar." The year of 364 days would be made up of four equal quarters, each of 91 days or 13 exact weeks, each beginning on a Sunday and ending on a Saturday, and each containing three months of 31, 30 and 30 days, respectively. This would simplify calculations for ascertaining the day of the week on which any given date falls: the same date would in different years fall always on

the same day. Every quarter has the same number of days, every month has the same number of weekdays. This reform necessitates the introduction of a "supplementary" day in ordinary years, and two supplementary days in leap years. It is proposed that these shall be international holidays, the first "year-end" day lying between December 30 and January 1, the second in leap year between June 30 and July 1.

The stabilization of Easter is no necessary part of a perpetual calendar; but it is very desirable that the two should be introduced together, for the wandering Easter gives rise to numerous disadvantages in the civil sphere. School, university and judicial work and commercial interests, particularly those relating to transport, are adversely affected. Probably few ever come to understand how it is that Easter wanders about over a period of 35 days, or grasp the "Tables and Rules" in the Book of Common Prayer, which, abstruse and cumbersome though they are, give only some partial explanations.

All are familiar with the nursery rhyme which recalls the number of days in the months: "Thirty days hath September, etc.," but few are familiar with the *memoria technica*, which lessen the labor of finding the Dominical Letter and the day of the week. The following canon serves to find the Dominical Letter:

> Divide the centuries by four, and twice what does remain
> Take from six; and then add to the number you gain
> The odd years and their fourth; which dividing by seven
> What is left take from seven, and the letter is given.

And the "Three Worthies of Dover" gives the clue to the day of the week:

> At Dover Dwells George Brown, Esquire,
> Good Christopher Finch And David Fryer;

where the 12 words personate the months and the initials are in the order of the Dominical Day for the first of each month. To determine the weekday of one's birth (and few know it) with the aid of this doggerel is a pleasing variation from a cross-word puzzle.

It was hoped by reformers that the change to The World Calendar would have been made in 1939, when January 1 was a Sunday and Easter on April 9 synchronized very closely with the date of the Crucifixion, now commonly accepted as April 7 (Julian).* Thus Easter would be fixed in April, and the festival of the Annunciation (Lady Day) would never fall on the same day as Passion Sunday.** The fixing of Easter has been accepted in principle in Great Britain by the passing of the Easter Act of 1928; but the Act has never been put into operation because the general assent of all Christian communions is required to make it practicable.

EDITOR'S NOTE: *30 A.D. **Passion Sunday, March 24; Annunciation, March 25.

INDEPENDENCE DAY CHANGE

By CHARLES C. SUTTER

Director, The World Calendar Association

INDEPENDENCE DAY, or the Fourth of July as it has become popularly known, would be permanently stabilized on a Wednesday in the proposed World Calendar. However, were a week-end celebration to appeal to the American people during this vacation month, Independence Day could well be advanced by two days to Monday, July 2.

Historical fact would sanction such a change, for the Continental Congress adopted on July 2, 1776, the resolution offered by Richard Henry Lee of Virginia, that "these United Colonies are, and of right ought to be, free and independent." This resolution was in essence the Declaration of Independence. The full resolution, taken from the Journal of the Continental Congress of 1776, follows:

"Resolved, That these United Colonies are, and of right ought to be, free and independent states, that they are absolved from all allegiance to the British Crown, and that all political connection between them and the State of Great Britain is, and ought to be, totally dissolved.

"That it is expedient forthwith to take the most effectual measures for forming foreign Alliances.

"That a plan of confederation be prepared and transmitted to the respective colonies for their consideration and approbation."

John Adams was so firmly convinced that July 2 would be the national Independence Day that he wrote, in part, in a letter to his wife:

"The Second of July, 1776, will be the most memorable epoch in the history of America. I am apt to believe that it will be celebrated by succeeding generations as the great anniversary festival. It ought to be commemorated as the day of deliverance, by solemn acts of devotion to God Almighty. It ought to be solemnized with pomp and parade, with shows, games and sports, guns, bells, bonfires and illuminations, from one end of this continent to the other, from this time forward, forevermore. You will think me transported with enthusiasm, but I am not. I am well aware of the toil and blood and treasure that it will cost us to maintain this Declaration and support and defend these States. Yet, through all the gloom, I can see rays of ravishing light and glory. I can see that the end is more than worth all the means. And that posterity will triumph in that day's transactions, even although we should rue it, which I trust God we shall not."

The Lee resolution was originally moved and seconded on June 7, and the consideration of it was postponed until the next day when it was debated in committee of the whole, but no action was taken. The resolution was reconsidered Monday, June 10. On that day the committee of the whole resumed its debate and at its conclusion submitted to the Congress the following resolution:

"Resolved, That the consideration of the first resolution be postponed to this day, three weeks, and in the meanwhile that no time be lost, in case the Congress agree

thereto, that a committee be appointed to prepare a declaration to the effect of the first of said resolutions, which is in these words: 'that these United Colonies are, and of right ought to be, free and independent states; that they are absolved from all allegiance to the British Crown; and that all political connections between them and the State of Great Britain is, and ought to be, totally dissolved.' "

The next day there was appointed a "committee of five" to draft a proposed declaration based on this resolution, under the chairmanship of Thomas Jefferson. John Adams, Benjamin Franklin, Roger Sherman and Robert Livingston completed the committee. Seventeen days later, on June 28, this committee submitted a draft of what has come to be known as the Declaration of Independence. It was then read and tabled.

Congress, on Monday, July 1, again considered the Lee proposal and, after a debate of the committee of the whole, postponed action for a day. This resolution mentioned in John Adams' letter was the conception of the Declaration of Independence. The Congress adopted the Lee resolution the next day, July 2, by a vote of 12 States. Ten States voted unanimously; New York did not vote; Pennsylvania and Delaware cast divided ballots (three votes in the negative). The formal Declaration of Independence, reported by the "committee of five" under Thomas Jefferson on June 28, was then considered by the committee of the whole on July 3 and July 4, when it was decisively adopted. Contrary to general opinion, the signatures were not affixed on the fourth, as most of the delegates signed it by August 2. Fifteen signatures were added later in the year.

The people of Philadelphia on the following Monday, July 8, 1776, were the first to celebrate the adoption of the Declaration by a mass meeting in Independence Square. On July 9, the Declaration was promulgated to the army in general orders by General Washington.

There is no record of how the anniversary of the adoption of the Declaration of Independence came to be celebrated; but a year later, on July 2, 1777, it occurred to someone in Philadelphia to arrange for a celebration dinner, and Congress adjourned on that day. John Adams, who seemed to be a prolific recorder of the events of his day, writing to his young daughter, described the scene that took place in Philadelphia. Great bonfires were lit in the streets and fireworks were set off in the evening, while bells tolled all day long and in the river warships were dressed with flags and at one o'clock companies of men were drawn up on the decks. Mr. Adams accompanied by the President of the Council and other gentlemen went aboard the "Delaware" and were greeted by a salute of 13 guns from each ship in succession, with music furnished by "a band of Hessians taken at Trenton." The dinner was served at a local city tavern at three o'clock. After dinner there was a parade of soldiers in the city. Mr. Adams on taking his evening exercise was "surprised to find the whole city lighting up their candles at the windows. I walked most of the evening and I think it was the most splendid illumination I ever saw; a few surly houses were

dark, but the lights were very universal."

In 1788 a more elaborate celebration was held in Philadelphia when it was known that the United States Constitution had been adopted by the requisite number of States. The document provided that "The ratification of the conventions of nine States shall be sufficient for the establishment of this Constitution between the States so ratifying the same."

The initiative action of July 2, was later to be quite forgotten in favor of celebrating the Fourth, the actual day the Declaration of Independence was approved and published to the world. The celebration of the Fourth of July thus became permanently stabilized and gradually spread through the country as new States and Territories were added throughout the Union, until at the present time it is a holiday in every State and Territory.

Boston did not celebrate the day until 1783, since it had been in the habit of celebrating March 5, the anniversary of the Boston Massacre. Accounts of the celebration in 1810 among other cities have been preserved. In New York by order of the city government salutes were fired. In Washington an oration was delivered by Robert Polk in the Baptist Church near the White House. In Richmond, Virginia, the formal celebration was limited to a parade and a dinner.

With the passing of years, the use of fireworks in the celebration of the anniversary became general and the day served for various purposes. In New York, Governor DeWitt Clinton turned the first sod for the digging of the Erie Canal in 1817. In 1828, Charles Carroll, the last surviving signer of the Declaration of Independence, broke ground for the building of the Baltimore and Ohio Railroad, the first railroad in this country. John Fremont in 1846 declared California free and equal. In 1850, in Washington, the cornerstone of the Washington monument was laid. In New York City in 1856 a statute of George Washington was unveiled in Union Square. The stars of the 47th and 48th states, New Mexico and Arizona, were added to the American flag in 1912. And in 1919 the foreign governments associated with the United States in the World War arranged a celebration in Washington. The face of George Washington carved by Gutzon Borglum on Mount Rushmore, South Dakota, was unveiled in 1930.

Quaint customs have prevailed throughout the country in celebrating the Fourth of July. Quite frequently there were two parades; in the morning a burlesque parade of men and boys dressed in fantastic costumes, and in the afternoon that of the military. In Greeley, Colorado, beginning in 1922, there was held what came to be called the Annual Greeley Spud Rodeo and Fourth of July Celebration, which attracted visitors from neighboring counties and at which contests of all sorts were held.

In our present calendar Independence Day would still continue to wander throughout the week. But the new World Calendar would remove all such uncertainties and vagueness. It would make possible the celebra-

tion of Independence Day always on Monday, July 2, or on Wednesday, July 4, if the nation still desires to cling to the "Fourth." Other holidays with definite dates can be advanced to preceding Mondays, if desired. Holidays in the United States under The World Calendar follow:

New Year's Day, Sunday, January 1
Washington's Birthday, Saturday, February 11
Lincoln's Birthday, Sunday, February 12
Memorial Day, Thursday, May 30, or Monday, May 27
Leap-Year Day, Extra Saturday, World-Holiday, June 31 or L
Independence Day, Wednesday, July 4, or Monday, July 2
Labor Day, Monday, September 4
Columbus Day, Thursday, October 12, or Monday, October 9
Election Day, Tuesday, November 7, or Monday, November 6
Armistice Day, Saturday, November 11
Thanksgiving Day, Fourth Thursday, November 23, or Monday, November 27
Christmas, Monday, December 25
Year-End Day, Extra Saturday, World-Holiday, December 31 or Y

Monday holidays are desirable but unless the calendar itself is stabilized first, every year the same, any stabilization of holidays is but wishful thinking. The cart cannot be put before the horse.

CALENDAR REFORM AND A FIXED EASTER

By J. R. Foster, In *The Modern Churchman*, Oxford, England, April, 1940

IT may be true that the fixing of Easter cannot be separated from a reform of the calendar, but it does not follow that reform of the calendar cannot be separated from the fixing of Easter. In the 16th Century the date of Easter and calendar reform were aspects of one and the same problem, because, owing to the accumulation of small errors, there was obvious disagreement between the records of the calendar and the sun, which in 1581 seriously upset the date of Easter. The correction of these errors has turned the problem into two: to meet the demand of the business world for a reformed calendar and the popular demand for fixing the date of a spring holiday in April, and though this is generally voiced as a demand for a fixed Easter, neither has any necessary connection with the Church festival.

The association in the public mind of calendar reform with a fixed Easter is due to the action of Parliament in 1871 in linking the bank holidays with the Church festivals, a fortuitous and quite unnecessary connection. Parliament was concerned with the establishment of annual holidays to be spaced at the most convenient intervals, and the dates should have been decided solely on this consideration. The unfortunate consequence is that calendar reform is being held up because this connection involves the dates of religious observances and has given rise to objections on the part of the Roman Church and of the Jewish community, though there is no reason why these should not freely observe days of their own choosing under a reformed calendar. The Jewish objection was expressed by the Chief Rabbi some time ago in a letter to the *Times;* it arises out of the proposed insertion of intercalary days, which is supposed to involve a change in the regular sequence of the seventh-day Sabbath. It is difficult to see why the insertion of New Year's Eve as a *dies non*, involving changing the Sabbath from Saturday to Friday for 12 months, should be unwelcome to the Jews.

If the problem of the reform of the calendar were dissociated from the fixing of Easter, no Christian religious observances would be involved and a reconsideration might remove the Jewish prejudices; calendar reform would then have some chance of attaining early success.

A DIARIST LOOKS AT TIME

By Clare W. Harris

HAVE you ever noticed that among the many dual classifications into which individuals can be grouped, there is one that has escaped general recognition; people who are *space*-conscious, and people who are *time*-conscious? Of course these two classes suggest extremes that seldom exist in reality, but like blond and brunette, good and bad, tall and short, introvert and extrovert, they do definitely represent trends in diverse types.

We are all familiar with the person whose sense of direction seems definitely a sixth sense, but upon whom the passage of time registers but lightly. In contrast we know of punctual, time-conscious people who can awaken without an alarm or guess to within a few seconds the duration of a definite period of time; but who are completely lost once they have turned a corner or two in space.

Were we mentally capable of the true space-time concept of Einstein, calendars and maps would be quite superfluous! Unfortunately we are not. We must have maps and calendars. The former can be made minutely accurate, and there seems to be no objection to printing new additions and corrections as soon as the facts are known.

With the calendar the situation is slightly different. True, the same exact, scientific data are there, but new psychological factors enter in; factors that tie up with customs, habits, emotions. If a map is inaccurate, scientific exactitude can prove it so, and there are no pious or prejudiced scruples against correcting it. If the calendar is not orderly or systematized, that is adjudged a matter of personal opinion. Too, the fact that our days (based on the rotation of the earth on its axis), our months (on the moon's phases) and our year (on the revolution about the sun) are not mathematically concordant, makes their convenient adjustment a matter of expediency, and the situation always gives rise to conflicting opinions.

Perhaps no one can find a *best* way, but there always seems to be a *better* way. Man's difficulty is his reluctance in relinquishing what, through habit and sentiment, has seemed good enough. The calendar is too intangible for many people to comprehend clearly. It is a concept, much more figurative and less literal than a map and people have a way of objecting to changes in their concepts. As should be, it is now presented more in the light of a modern, practical invention; a *thing* as concrete for time as a map is for space.

Diarists are time-conscious people. Past, present and future! What

magic in their contemplation! I have kept a daily diary for 35 years, and am well aware of the pleasure of visiting mentally the scenes of long ago, whether they be gay or sad. If the former, it is naturally a pleasure to relive them in thought, if the latter, the present compares favorably.

To the statistical and systematic mind of the diarist there is an annoyance in reading back to see what one did 3, 7, 16, 24 years ago, and to discover that the references can hardly be comparable. Although a definite number of years ago from the entry date, yet no two weekdays correspond! One is inclined to compare the dates by the years and months, and yet the routine of daily life makes the weekly comparison more desirable. On September 7, 1908, I was on vacation: on the same monthly date four years later, Labor Day had passed. I was at work, and the same two dates were not comparable.

The proposed World Calendar seems to me to possess all the virtues of the present calendar and none of its vices, plus the advantage of as near an orderly perfection as it is possible to obtain under natural limitations. Personally I cannot understand any sentiment for a human, arbitrary system after it has outlived its usefulness. The calendar has been altered before to fit changing, human needs, and to correspond more accurately with man's growing conceptions of the Universe; why should it not now be changed so that it conforms to the last word in science and human efficiency?

A diarist is well aware of the lesson taught by the ingenuity of the calendar in its attempt to minimize temporal difficulties which were for ages seemingly insurmountable. The coordination of the rotation of the earth, its revolution around the sun, the phases of the moon and the necessity for a period of days within the month to be used as a unit, proved that man is capable of satisfactorily organizing his affairs within the bounds of Nature's edicts. Within his limitations of heredity and environment man may systematize his life. The result may be, figuratively, a calendar with five days left over in one place, a month three days shorter than the one next to it, or a well thought out, organized and functioning whole that serves its purpose most efficaciously. He rules life, yet paradoxically he obeys its laws implicitly.

This calendar, like those that have preceded it, may not prove the final word. Others may follow with increasing knowledge and observances that always lie before us. For nothing is static as everything progresses. It is the same attempt that is evident in all of life's struggles; to work as best we can within the limits that Nature has imposed upon us.

Diarists, though numerically a small group, are at least exceptionally time-conscious. I sincerely believe I voice the sentiments of each and every one when I advocate without reservation the adoption of The World Calendar.

NEW BOOK IN SPANISH

Reviewed by the Reverend Edward S. Schwegler, D.D.

ACTUALIDADES CIENTIFICAS. *Reverend Father Ignacio Puig, S.J., Buenos Aires, 1939.*

THE publication in Buenos Aires of a handsome little volume entitled *Scientific Actualities* by Father Ignacio Puig, S. J., serves to emphasize the fact that another priest-scientist is a solid advocate of calendar reform. Not that the volume treats extensively of this problem: it has only one chapter on the subject, but that chapter is positive, succinct, and authoritative.

Father Puig follows in the footsteps of many illustrious confreres in the famous Society of Jesus by having made a name for himself in scientific, and more especially in astronomical, fields. He is the Director of the important Observatory of San Miguel, in the Argentine Republic, and a member of the National Council of Observatories as well as of the Buenos Aires Academy of Sciences. And formerly he was professor of chemistry in the Institute of Barcelona and member of the Geodetic and Geophysical Council of Spain.

That Father Puig is held in the highest esteem by those who are acquainted with the man and his work may be gathered from the following remarks by the editor of the Buenos Aires *El Pueblo* in an introduction to the book:

"The learned Jesuit does not pour out a flood of erudition so as to terrify ordinary mortals. He does not use his learning as a battering ram to open a way before him through the world. He does not want trumpets blown at his passing. He is a living proof that true science is not pedantic: its high specific gravity does not permit the fatuous exposition of meaningless vacuities.

"The author of this work, which will be followed by three other similar productions, is a most worthy priest, an outstanding scholar, an indefatigable student, and a scrupulous and systematic worker, whilst at the same time humility, modesty, and prudence grace his character.

"Having spoken of his talents, let us add that this learned religious has not tried to hide his learning under a sterile bushel. He has not taken the life from his work by refusing to have it diffused. He has not buried the biblical talents.

"He has not written with his finger in the sands of the seashore, as have other authors of my country. He has tried to let the talent God gave him shoot out its rays to the utmost bounds of the land: he has multiplied his talents and made them illuminate many minds. He has looked for the best

possible means of disseminating his thought—for a vehicle that would be truly effective. And to this fact we owe it that the following articles first appeared in the columns of *El Pueblo.*"

The editor of *El Pueblo,* an Argentine Catholic daily, certainly has given an enthusiastic introduction to his contributor. Father Puig's book, it seems, is a collection of articles on scientific subjects that first appeared in this newspaper.

The book is naturally most diverse in its contents, treating of anything from the position of the sun to the astronomers of the Society of Jesus. But the chapter of immediate interest here is the one on calendar reform.

In this chapter Father Puig premises that he has long been interested in the problem of an improved calendar, and refers to various articles contributed by him to *Razon y Fe,* the review published by the Jesuits at Madrid.

Father Puig gives no references; but an independent search reveals that already in 1930 he was writing on the subject—for example, an article entitled "Los Proyectos de Reforma del Calendario," published early in that year.

After thus reminding his readers of his familiarity with the question of calendar reform, Father Puig proceeds to list the inconveniences of our present calendar and to give a succinct explanation of The World Calendar.

In noting the difficulties about fixing the date of Easter he says: "A Church council (Nicaea, 325 A.D.) decided upon the day that should be observed for the celebration of Easter. It is only proper, therefore, that the same Church give its approval to a proposed new date: that it again decide what day should be kept."

In concluding his brief article, Father Puig quotes as follows from the work of Father J. Santillana, S.J., which was being received, at the time the article was written, with much acclaim:*

"In this, as in few problems of human life, success or failure must depend on public opinion; and public opinion must be created by the infectious enthusiasm and forceful convictions of individuals. To make a modest contribution towards arousing such opinion was my only purpose in composing these lines. Brief and rapid though they are, they are filled with conviction and hope."

Concludes Father Puig: "So say I at the end of this article, if it is possible to compare this brief production with a documented book of reference."

El Actual Calendario Juliano-Gregoriano y su Sensacional Reforma en el Año 1939. J. Santillana, S. J., Buenos Aires, 1936. Cf. *Journal of Calendar Reform,* Vol. VII, p. 138.

CURRENT PRESS COMMENT

Chicago Support

Coldwater (Mich.) Reporter

Enlisting in the effort to get a more practical kind of calendar the Chicago Woman's Club has formed a World Calendar Committee. The Club, in taking up this campaign for calendar reform, is acting in accordance with the policy of the General Federation of Women's Clubs, which about a year ago adopted a resolution favoring a permanent World Calendar.

Evolution of the Calendar

New York Museum of Science and Industry's Exhibit News Letter

Would you like to save $607 an hour? That is the amount recently estimated by a prominent radio news commentator as representing the cost to the tax-paying community of New York City, of our present method of measuring time by a calendar which varies from year to year. With each quarter beginning and ending on a different day of the week, with a varying number of days in the different months, with each month and each year beginning on a different weekday, the keeping of records, the gathering of statistics and the making of periodic payments present a tedious, complicated and costly problem which affects the business world probably more than any other unit of our social and economic system. The building industry alone, to cite a single important example, is said to blame the loss of millions of dollars annually directly on our present irregular calendar, and rarely does the production and profit-taking year of any industry coincide with the calendar year.

Benefits that it is believed business and industry, as well as all other departments of modern life, would derive from the adoption of a stabilized, uniform World Calendar, in which all quarterly periods are equal and end on the same day in every year, each month has the same number of days from year to year and all holiday dates are fixed, are strikingly presented and explained in the exhibit which The World Calendar Association installed in the Museum last year.

Leap Year

Chattanooga (Tenn.) Times

A simple remedy has been suggested by The World Calendar Association in the form of a calendar revision which has already been formally approved by 14 nations. The 12 months would be divided into four identical quarters of 91 days each. Every three months would be exactly alike. Obviously, if a person memorized the calendar for a quarterly period he would never have to look at a calendar again.

Approval by the Church

Chapel Hill (N. C.) Weekly

It is the modern-mindedness of the new Pope, Pius XII—his acquaintance with social and economic problems and his interest in the affairs of the workaday world—which encourages advocates of the proposed new calendar to anticipate that he will give calendar reform his support.

A few years ago the Holy See made the pronouncement that "no question of dogma is raised by the proposals for calendar reform." Most of the Protestant Churches have approved the new calendar, and the Archbishop of Canterbury declared in the House of Lords: "It is impossible to resist the plea for reform which comes from all the great organizations of commerce and industry throughout the world."

The present calendar is a chaotic jumbling of time-units, utterly incompatible with this age of speed and precision. The approved plan of reform is known as The World Calendar.

Pro and Con

Grand Forks (N. D.) Herald

Just why we observe Thanksgiving Day on Thursday has never been established. The first Thanksgiving Day, in 1621, was a Friday. Until 1863, it fell on various weekdays.

As it is now, the Thursday holiday practically ties up commercial activity for the balance of the week. The Monday holiday, it is agreed, would avoid this. The change is likely to have full approval of commercial and educational interests.

EXCERPTS AND REVIEWS

Russia Abandons Five-Day Work-Week

By G. E. R. GEDYE

In *The New York Times*, June, 1940

THE Workers of the Soviet Union were recently called on to sacrifice their five-day 35-hour work-week, and work a six-day work-week of 48 hours to speed armaments and defenses.

This was announced by the All-Union Central Council of Trade Unions. It was declared that in view of the war situation and intensified preparations by capitalist countries it was necessary for Soviet workers to intensify their efforts to strengthen the country by rushing more airplanes, tanks and other war materials.

The six-day week, introduced by the Revolution, will be suspended and the former seven-day week will be restored. Workers in branches working a six-hour day will be required to work seven hours; those now working seven hours will be required to work eight hours. The work-period of those working an eight-hour day will not be increased. "The international situation is full of unexpected possibilities of the war danger increasing for the Fatherland," says *Pravda*. "The seven-hour and six-hour labor day is not sufficient to solve the problems challenging this country." *Pravda* recalls that in the countryside the week always had seven days.

Catholic Church's Opportunity

By ABBÉ CHAUVE-BERTRAND

Eminent Roman Catholic Authority on the Calendar

THE question of calendar reform has progressed greatly since 1931. Its solution seems to be approaching maturity. One can now foresee that this reform will be accomplished, be it within a few years, or at a more distant time.

At every instant we are reminded in France that the clergy and the Catholics have not been at the head of the great problems which modern times present, that they did not know how to comprehend in time the recommendations of Leo XIII, and that they are in part responsible for the apostasy of the masses of people, about which they now lament.

May there be no further occasion of this. The names of Julius Caesar, Sosigenes, Gregory XIII are justly famous because of reforms accomplished in past centuries, and they are honored everywhere, even in schools for children. A rare occasion is offered to the Papacy to lend its prestige to the new reform which, besides the advantages which it carries in itself, can become the point of departure for an inducement towards a federation of the Christian Churches, as well as for a liturgic and religious growth in the entire world.

Will the heads of the Churches let this opportunity escape them?

Child Development Research

By HARRIET ELIZABETH NEALL

In *Child Development*, Vol. 10, No. 4, December, 1939

THE calendar is a basic tool in the field of child development. Calendar dates are used to compute the chronological age of a subject at the time of a given test or observation. Calendar dates are also used to compute the interval which has elapsed between two tests, a point of special importance in cumulative studies of development. Thus an essential item in almost every record is the date upon which the test or observation was made. The investigator may wish to control the time element by testing the child when he is of a specified chronological age, or by re-testing him at regular intervals of, for example, one month, six months, or one year. In this case, the arrangement of individual appointments for a group of subjects is an administrative task in which the calendar must be consulted constantly.

The confusing irregularities of the present Gregorian calendar are thus of significance to workers in the field of child development. An improved calendar, known as The World Calendar, is now proposed. Workers in the field of child development should give careful consideration to this calendar from the point of view of their own interests and needs. It

appears to offer the following advantages:

1. The initial recording of a correct date would be easier with a systematic, perpetual calendar.

2. The planning and making of appointments should be greatly simplified. Notice that a birth-date will always recur on the same day of the week year after year.

3. Intervals between tests could be more easily equated because the year is divided into equal quarters and all months have either 30 or 31 days.

4. The computation of intervals between dates should be simplified, especially if the exact number of days in the interval is required. The Year-End Day can easily be allowed for, but our present irregular months cause complication. The irregularity produced by leap year is found in our calendar and cannot be eliminated.

The change to an improved calendar need not disturb cumulative studies now in progress. Since the total number of days in the year is unchanged, an "equivalent date" in the new calendar can easily be computed for each date in the Gregorian calendar. For example, the 61st day of the year is March 2 in the Gregorian calendar and February 30 in The World Calendar. With all dates converted into the new form, computations of time-intervals could proceed without error.

Some British Suggestions

By Sir Charles Vernon Boys, K.B., LL.D., F.R.S., A.R.S.M., British Physicist, and Elliott Cresson, Gold Medalist of the Franklin Institute, 1939

RECENTLY one of your contributors pointed out that there is nothing sacrosanct in the week of seven days or rather that there is nothing in Nature to correspond with it. This no doubt is the case. All the same the ever recurring week of seven days is about the only thing in our measurement of time which has never varied. I suppose that when the mob shouted "give us back our 11 days!" it was only the days of the month that they thought they had lost, not days of the week, which pursued their invariable rotation through the troubled times. This has its value in historical time-reckoning because the number of days from any one Sunday in one century to any Sunday in any other century is of necessity a multiple of seven, and this is the only consistently regular thing about time-measurement through the ages that there is. With the new calendar (World Calendar), which we are convinced is by far the best, this goes overboard at once.

Again coming to the daily life of the great majority of our people, they are paid by the week and the regularly recurring week makes this easy and natural. With the new calendar there is an odd day for each of three years and two odd days in the fourth. Of course adjustment can be made and it will have to be made for this small complication. Similarly when service is terminated at a month's notice, if that is a four-week month, not a calendar month, the odd day might get in the way and, unless provided for by law, it would be a potent cause for disagreement at times when relations are apt to be strained.

We are mentioning these things not because they cannot be met and met fully, but because they do destroy our only regular sequence, and because, if not very carefully ordained, they may open the door to the "sea-lawyer" to stir up strife.

Another question is the date of Easter and of the movable feasts of the Churches. Surely the Easter of the Church now has nothing to do with the spring holiday of joy-riding and sea bathing which the public look to for recreation and as a break in their daily work. All we have to do is to call this holiday the "Spring Holiday" or use any name for it that will go down well and leave the Church Easter to the ecclesiastical authorities. If they do not mind stabilizing Easter well and good, but if they do we can have our spring holiday at any time that is preferred, and not necessarily at the same time for all countries. According to the latitude and the climate the most advantageous times for the spring holiday, to be settled independently for each country, might well differ by as much as a month. This is a good reason for not being tied to the ecclesiastical Easter.

You will understand that in urging the independence of the spring holiday and the ecclesiastical Easter we are not making any suggestion unfriendly to the Church, quite the reverse; where two things have nothing to do with one another it is not to the advantage of either that they should be tied together and be made to run like the competitors in a three-legged race.

FROM THE MAIL BAG

I find I sympathize with much in your program.—J. Beaumont Pease, Chairman of Lloyds Bank, London.

Department store people will, I am sure, be most interested in this calendar reform and, as President of the International Association of Department Stores, the members of which are the most important department stores in seven European countries, I shall be ready to draw the members' attention to your Association.—S. Bøgelund-Jensen, Man. Dir., Th. Wessel & Vett, Magasin du Nord, Copenhagen.

I am sure that the main point to emphasize with regard to a change in the calendar system is the 12-month as opposed to the 13-month system. In passing its Resolution, the Universal Christian Council I think intended to note the acceptance by the Churches generally of (1) the principle of a fixed Easter, and (2) the principle of a 12-month, as opposed to a 13-month, calendar.—The Right Reverend The Lord Bishop of Chichester, England.

Our changing civilization makes calendar adjustments a necessity for effective coordination of our multiple interests.—Dr. E. LeRoy Dakin, Minister, Milwaukee.

I congratulate you on the fine work which you are doing in the education of the public along the line of an improved calendar.—Prof. H. Crew, Evanston, Ill.

From this new post, to which I have been promoted, I fondly hope that I shall be able to do much more talking and writing in favor of your so highly important and urging movement. — Rev. Armand Morissette, S. M. I., O. M. I. Provincial House, Lowell, Mass.

Heartily in favor of this movement.—Dr. H. Jackson, Physician, Winnetka, Ill.

I am convinced The World Calendar will be the best in every way from the standpoint of the Certified Public Accountant. —G. W. Schwartz, C. P. A., Chicago

Shall endeavor to do all in my power, be it ever so little, for the progress and advancement of calendar reform. I wish the movement all success.—Don. Cornelis P. Beneragama, Anguruwatota, Ceylon.

I am heartily in favor of the adoption of The World Calendar.—Prof. J. W. Bailey, Berkeley, Cal.

The World Calendar is by far the best devised, and I hope that you can get it universally adopted.—C. B. Jones, Tulsa.

I am as cordially in favor of The World Calendar as I was uncompromisingly opposed to the plan to divide the year into 13 months. — Mr. Lee W. Zeigler, Newburgh, N. Y.

Here at last—*is* a calendar.—Harry Rosenthal, Jersey City.

I think the proposed World Calendar shows thrift of mind, of time, and most of all, saving of money.—J. Olin Van Ness, Houston, Tex.

Some day we may get the date of Easter established in all the Christian Churches by common agreement. The present divergence in dates upsets our Church winter schedules very considerably and often makes us trouble. Fixing the date of Easter irrevocably henceforth for April 8 or the second Sunday in April would keep up Church attendance a little longer and still not bring it so late that spring fever and week-end jaunts into the country would upset Church business.—Theodore Ainsworth Greene, D.D., New Britain, Conn.

I am sincerely interested in your work, and will take opportunity to say so when and where I can be of service to the idea. —Dr. Robert Whitaker, Los Gatos, Cal.

Heartily support your very clear principle that the fixation of the calendar and the fixation of Easter are two very different things, quite mutually independent, and that each requires a separate act of universal agreement for its fulfillment. So many reforms that I have seen try to do both at once, and the public gets some kind of confused notion that calendar reform is inseparable from the fixation of Easter, which throughout all history has been one of the touchiest points of religious and civil controversy.—Rev. Raymund F. Wood, S. J., Mount Saint Michael's, Spokane, Wash.

THE WORLD CALENDAR ASSOCIATION

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AUSTRALIA: Committee on Calendar Reform of the Australian and New Zealand Association for the Advancement of Science, C. W. Allen, Secy., Solar Observatory, Canberra.

BELGIUM: Belgian National Committee on Calendar Reform, Professor M. Dehalu, President, l'Université de Liège, Liège.

BOLIVIA: Comité Boliviano del Calendario Mundial, Don Moises Santivanez, Chairman, Biblioteca Nacional, Sucre.

BRAZIL: Comité Brasileiro do Calendario Mundial, Captain Radler de Aquino Chairman, Rua Raul Pompeia No. 133, Rio de Janeiro.

CANADA: Rational Calendar Association, Lt.-Col. J. Murray Muir, Secy., 82 Jane St., Toronto 5.

CHILE: Comité Chileno del Calendario Mundial, Prof. Alberto Cumming, Chairman, Calle Manuel Rodriguez, Santiago.

CHINA: Chinese Association for the Study of Calendar Reform, Dr. Ch'ing-Sung Yü, Director, National Institute of Astronomy, Kunming, Yunnan.

COLOMBIA: Comité Colombiano del Calendario Mundial, Dr. Eduardo Posada, Chairman, Consulado General de Honduras, Apartado 42, Bogota.

COSTA RICA: Comité Costarricense del Calendario Mundial (Igualmente de Guatemala, Honduras, El Salvador y Nicaragua), Don Teodoro Picado, Chairman, San Jose.

CUBA: Comité Cubano del Calendario Mundial, R. P. Mariano Gutierrez Lanza, Chairman, Belén Observatory, Havana.

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FRANCE: Comité National pour la Reforme du Calandrier, Senateur Justin Godart, President; Paul-Louis Hervier, Secy., 5, Rue Bernoulli, Paris.

GERMANY: Deutscher Ausschuss für Kalenderreform, Dr. Grosse, Geschaftsfuhrer, Neue Wilhelmstr. 9/11, Berlin N. W. 7.—Der Weltbund für Kalenderreform, Dr. Rudolph Blochmann, Secy., 24 Lornsenstrasse, Kiel.

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EDITORIAL PARAGRAPHS

The present calendar is by no means perfect. The hard fact is that the year isn't what we say it is, and like the circle, it simply can't be squared.—*New York Times.*

We need hardly add that the Church would have no objection to a fixed Easter if international agreement could be obtained.—London (England) *Catholic Herald.*

Enlisting in the effort to get a more practical form of calendar, the Chicago Woman's Club has a World Calendar Committee.—Boston (Mass.) *Christian Science Monitor.*

The reform of our calendar has long been under discussion. The World Calendar is sponsored by scientific, business, religious and educational organizations all over the world, including the United States.—San Francisco (Cal.) *Commercial News.*

Women's support should give calendar reform great impetus.—Brooklyn (N. Y.) *Citizen.*

The advocates of the Fixed Easter in April have made great progress—Glasgow (Scotland) *Glasgow Weekly News.*

The U. S. Government has recognized The World Calendar Association as an "educational" organization. — Portsmouth (England) *Portsmouth Evening News.*

There are signs that before very long all of us may be on a new calendar basis. If so, it will mark the second change in what might be termed the modern history of the world.—Bismarck (N. D.) *Tribune.*

That the calendar needs revising must be obvious to anybody who reads the papers. The calendar has not kept abreast of the times.—Tampa (Fla.) *Times.*

The clumsiness of the calendar under which the world operates is a constant source of irritation. — Allentown (Pa.) *Call.*

All this confusion is but one more argument in favor of a simplified calendar, if we can ever get around to it.—Macon (Ga.) *Telegraph.*

The calendar has been changed in the past, and from this distance it would seem that the changes were in the nature of improvements.—Natchez (Miss.) *Democrat.*

Old Father Time declared an extra dividend February 29—the quadrennial Leap-Year Day.—Woonsocket (R. I.) *Call.*

Reasons continue to multiply for the reformation of our calendar.—Port Huron (Mich.) *Times-Herald.*

To join the observance of the birthdays of Washington and Lincoln on one and the same week-end is one of the aims of The World Calendar Association.—Burlington (Vt.) *Free Press.*

It is contended that a more nearly uniform calendar, with the same day of the week always occurring on the same day of the month, would simplify bookkeeping, pay-rolls and the arrangement of days off. —Manchester (N. H.) *Daily.*

The World Calendar plan, if universally adopted, might create some confusion for a time, but it has advantages that are quite obvious, for it would eliminate the difficulties caused by our present uneven calendar.—Warren (Ohio) *Tribune-Chronicle.*

Various holidays observed by all or part of the nation in the past few months have served as the basis for new discussions on the desirability of revising the calendar.—Norman (Okla.) *Transcript.*

It is a certainty that business men, lawyers and housewives will some day force this reform in our calendar, since the ecclesiastics have raised no objection.—Tiverton (R. I.) *Newport Co. Sentinel.*

Looking forward to an age of more leisure for the working class, means that holidays at regular dates instead of fluctuating, would aid the planning of vacations. —Lovell (Wyo.) *Chronicle.*

After Reading Please Pass On to Others

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Journal of CALENDAR REFORM

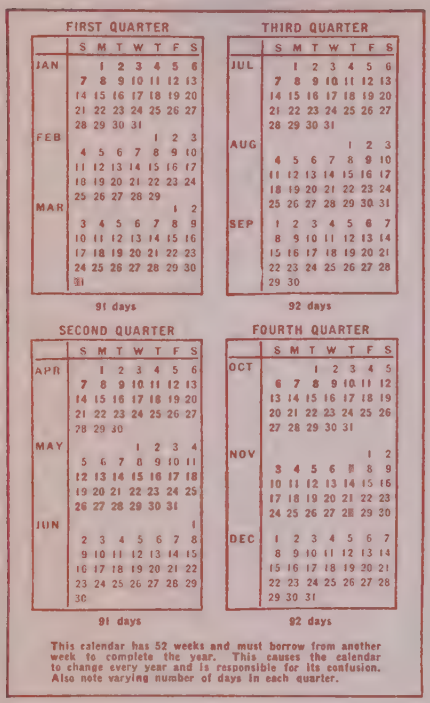
FOURTH QUARTER

1940

1940

A LEAP YEAR

PRESENT GREGORIAN CALENDAR



FIRST QUARTER

	S	M	T	W	T	F	S
JAN		1	2	3	4	5	6
	7	8	9	10	11	12	13
	14	15	16	17	18	19	20
	21	22	23	24	25	26	27
	28	29	30	31			
FEB					1	2	3
	4	5	6	7	8	9	10
	11	12	13	14	15	16	17
	18	19	20	21	22	23	24
	25	26	27	28	29		
MAR						1	2
	3	4	5	6	7	8	9
	10	11	12	13	14	15	16
	17	18	19	20	21	22	23
	24	25	26	27	28	29	30
	31						

91 days

THIRD QUARTER

	S	M	T	W	T	F	S
JUL		1	2	3	4	5	6
	7	8	9	10	11	12	13
	14	15	16	17	18	19	20
	21	22	23	24	25	26	27
	28	29	30	31			
AUG					1	2	3
	4	5	6	7	8	9	10
	11	12	13	14	15	16	17
	18	19	20	21	22	23	24
	25	26	27	28	29	30	31
SEP	1	2	3	4	5	6	7
	8	9	10	11	12	13	14
	15	16	17	18	19	20	21
	22	23	24	25	26	27	28
	29	30					

92 days

SECOND QUARTER

	S	M	T	W	T	F	S
APR		1	2	3	4	5	6
	7	8	9	10	11	12	13
	14	15	16	17	18	19	20
	21	22	23	24	25	26	27
	28	29	30				
MAY				1	2	3	4
	5	6	7	8	9	10	11
	12	13	14	15	16	17	18
	19	20	21	22	23	24	25
	26	27	28	29	30	31	
JUN							1
	2	3	4	5	6	7	8
	9	10	11	12	13	14	15
	16	17	18	19	20	21	22
	23	24	25	26	27	28	29
	30						

91 days

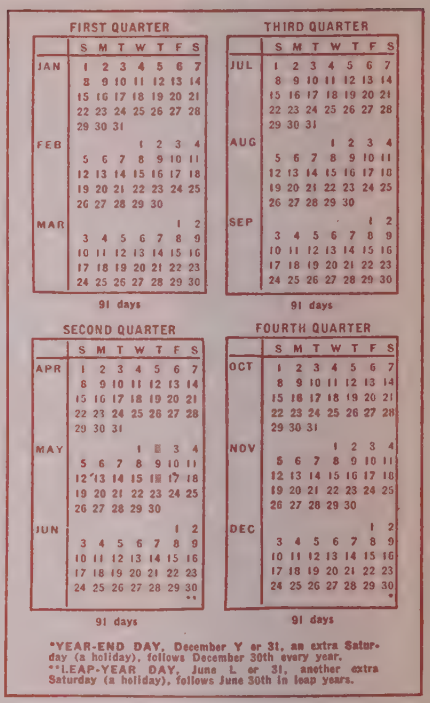
FOURTH QUARTER

	S	M	T	W	T	F	S
OCT			1	2	3	4	5
	6	7	8	9	10	11	12
	13	14	15	16	17	18	19
	20	21	22	23	24	25	26
	27	28	29	30	31		
NOV						1	2
	3	4	5	6	7	8	9
	10	11	12	13	14	15	16
	17	18	19	20	21	22	23
	24	25	26	27	28	29	30
DEC	1	2	3	4	5	6	7
	8	9	10	11	12	13	14
	15	16	17	18	19	20	21
	22	23	24	25	26	27	28
	29	30	31				

92 days

This calendar has 52 weeks and must borrow from another week to complete the year. This causes the calendar to change every year and is responsible for its confusion. Also note varying number of days in each quarter.

PROPOSED WORLD CALENDAR



FIRST QUARTER

	S	M	T	W	T	F	S
JAN	1	2	3	4	5	6	7
	8	9	10	11	12	13	14
	15	16	17	18	19	20	21
	22	23	24	25	26	27	28
	29	30	31				
FEB				1	2	3	4
	5	6	7	8	9	10	11
	12	13	14	15	16	17	18
	19	20	21	22	23	24	25
	26	27	28	29	30		
MAR						1	2
	3	4	5	6	7	8	9
	10	11	12	13	14	15	16
	17	18	19	20	21	22	23
	24	25	26	27	28	29	30

91 days

THIRD QUARTER

	S	M	T	W	T	F	S
JUL	1	2	3	4	5	6	7
	8	9	10	11	12	13	14
	15	16	17	18	19	20	21
	22	23	24	25	26	27	28
	29	30	31				
AUG				1	2	3	4
	5	6	7	8	9	10	11
	12	13	14	15	16	17	18
	19	20	21	22	23	24	25
	26	27	28	29	30		
SEP						1	2
	3	4	5	6	7	8	9
	10	11	12	13	14	15	16
	17	18	19	20	21	22	23
	24	25	26	27	28	29	30

91 days

SECOND QUARTER

	S	M	T	W	T	F	S
APR	1	2	3	4	5	6	7
	8	9	10	11	12	13	14
	15	16	17	18	19	20	21
	22	23	24	25	26	27	28
	29	30	31				
MAY				1	2	3	4
	5	6	7	8	9	10	11
	12	13	14	15	16	17	18
	19	20	21	22	23	24	25
	26	27	28	29	30		
JUN						1	2
	3	4	5	6	7	8	9
	10	11	12	13	14	15	16
	17	18	19	20	21	22	23
	24	25	26	27	28	29	30
							**

91 days

FOURTH QUARTER

	S	M	T	W	T	F	S
OCT	1	2	3	4	5	6	7
	8	9	10	11	12	13	14
	15	16	17	18	19	20	21
	22	23	24	25	26	27	28
	29	30	31				
NOV				1	2	3	4
	5	6	7	8	9	10	11
	12	13	14	15	16	17	18
	19	20	21	22	23	24	25
	26	27	28	29	30		
DEC						1	2
	3	4	5	6	7	8	9
	10	11	12	13	14	15	16
	17	18	19	20	21	22	23
	24	25	26	27	28	29	30
							*

91 days

*YEAR-END DAY, December Y or 31, an extra Saturday (a holiday), follows December 30th every year.
**LEAP-YEAR DAY, June L or 31, another extra Saturday (a holiday), follows June 30th in leap years.

EACH YEAR DIFFERENT

This calendar is always different from year to year.

The quarters are unequal in length. In leap years the first half-year has 182 days; the second, 184 days.

Each quarter begins and ends on a different day of the week.

Each month begins and ends on a different weekday.

The months have a varying number of weekdays.

Each year begins on a different weekday.

This calendar is unbalanced in structure, unstable in form, and irregular in arrangement.

SOON YOU WILL BE DISCARDING THIS OBSOLETE CALENDAR.

EACH YEAR THE SAME

This 12-month equal-quarter calendar is good for every year.

The quarters are equal in length.

Each quarter begins on Sunday and ends on Saturday, contains 3 months—13 weeks—91 days.

Month-dates always fall on the same weekdays. Each month has 26 *weekdays*—plus Sundays.

Each year begins on Sunday.

Year-End Day and Leap-Year Day, the extra Saturdays, are World-Holidays.

This revised calendar is balanced in structure, perpetual in form, harmonious in arrangement.

SOON YOU WILL BE USING THIS UP-TO-DATE CALENDAR.

THE RIGHT REVEREND ERNEST MILMORE STIRES

Bishop of the Diocese of Long Island

Bishop Stires has been Bishop of the Diocese of Long Island since November 24, 1925. Born in Norfolk, Virginia, on May 20, 1866, he graduated from the University of Virginia in 1888, a Bachelor of Letters, and from the Episcopal Theological Seminary of Virginia in 1891. He received the degree of Doctor of Divinity from Trinity College in 1901 and is the holder of many honorary degrees. Ordained a deacon in 1891, a priest in 1892, he became Rector at West Point, Virginia, in 1891, Church of the Good Shepherd, Augusta, Georgia, in 1893, and Grace Church in Chicago the same year. He came to St. Thomas' Church in New York in 1901.

He has been Chaplain of the Richmond Hussars of Augusta, Georgia, the Naval Reserves of Chicago, and the First Illinois Cavalry. Author of several books, his "The High Call" and "The Price of Peace" will be particularly remembered.

He became a member of the American Advisory Committee of The World Calendar Association in April, 1938. Long an advocate of calendar reform, he seconded the resolution presented by the Right Reverend William T. Manning, Bishop of New York, which secured the Protestant Episcopal Convention's endorsement of The World Calendar in 1934. Bishop Stires has since restated his approval "When the proposal came before our General Convention I was glad to advocate it most warmly. It has everything to commend it, and I do not know of any reasonable objection which can be advanced against it. It is bound to win. May the victory come soon!"



THE RIGHT REVEREND ERNEST MILMORE STIRES

Bishop of the Diocese of Long Island, New York

(See Article on Page 147)

LET US ENCOMPASS THE EARTH WITH A NEW ORDER OF TIME

VOL. X FOURTH QUARTER, 1940 No. 4

WITH this fourth-quarter issue of the *Journal*, one's attention instinctively turns to the close of the year with the December message of good will toward men ringing in our hearts, thus leading our thoughts and actions to the new year upon which we are embarking.

Good will is the essence of human relationship and the basis of our religious, social and civil life. From it emanate those dynamic qualities which are the constant hope of a finer and better world for mankind: brotherly love and neighborliness. Any failure in these qualities would only add to the discord from which, alas, the world is so grievously suffering today.

Toward fulfilling in an ever greater degree the world-wide ideal of good will, The World Calendar Association, with its members and friends reaching out to every part of the earth, is steadfastly sponsoring a calendar that will not only achieve a greater spirit of harmony, order and balance in its arrangement, but also will encourage through its direct contact and usage these same characteristics in the life of every man, woman and child. For Time recognizes no favorites or boundaries. It has, therefore, a marked effect on civilization since the latter is actually dependent upon the calendar. The World Calendar, by cojoining the various units of the year and by making this coordination permanent, would greatly aid in harmonizing our daily living. Thus would be eliminated many sources of friction that exist today in the daily exchange of our economic, social, educational and religious life. A greater spirit of good will would prevail.

The World Calendar may easily lay the foundation for the birth of a finer and newer world upon this map of Time. Toward this objective, as the President of the Association, may I call upon its hosts of friends and supporters, known and unknown, to aid in realizing its goal? Only by this continued cooperation can The World Calendar become a herald of a new day and a messenger of good will to all men.

ELISABETH ACHELIS.

Journal of
CALENDAR REFORM

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1940

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A PERMANENT DATE FOR EASTER

By The Right Reverend Ernest Milmore Stires

Bishop of the Diocese of Long Island, New York

THE increasing inconvenience of a constantly changing date for Easter is hastening the general acceptance of the proposed World Calendar. This year Easter Sunday came on March 24, within two days of the earliest possible time; next year it will be April 13; in 1942 it will be April 5; and in 1943 it will be April 25, the latest day on which it can possibly fall. The clergy of all Christian churches are conscious of much unnecessary work in annually adjusting church programs to a rather long series of changed conditions and dates. Millions of church members are also conscious of various kinds of inconvenience.

Not only church schools, but all schools, in arranging for a spring or Easter holiday, have had to wrestle with this same difficulty which compels a somewhat radically altered school calendar every year. It would not be difficult to present an impressive list of important enterprises, religious and secular, which are directly affected by the changing date of Easter, and which would be immeasurably encouraged and improved if the churches could agree upon a fixed date for Easter, and, for that matter, if the entire world could agree upon a more intelligent calendar.

It should be unnecessary in this brief statement to repeat the history of the development of our calendar. It has been given often, but not too often, in the *Journal of Calendar Reform.* At last the whole civilized world has become aware of the urgent need of calendar reform, and appears to be ready to accept the proposed World Calendar.

In all the history of the development of the calendar, no such intelligent proposal has ever been made as that which is now before us. Let us concede that it is desirable to change as little as possible the generally accepted divisions of the year into quarters, months, weeks, and days. The World Calendar offers us four quarters containing an identical number of days, the first month in each quarter having 31 days, and the two following months 30 days each. This gives us 364 days.

And the proposed new calendar would close the year with a day which would ordinarily be December 31, an extra day—a holiday called Year-End Day, which by the way would always be an extra Saturday. This day is vital to the calendar for two specific reasons. It is the 365th day of the year, whereby its accuracy with the seasonal solar year is maintained; and secondly, the extra Saturday—the Year-End Day, always coming at the close of the year—enables every year to begin with Sunday, January 1. It is this perpetual feature of The World Calendar which is important.

The new calendar also provides that in a leap year the month of June

would have an extra day following the 30th of June, marked L. Y. D., that is, Leap-Year Day, an extra Saturday, also a holiday. These extra days which in The World Calendar are considered as "World Holidays" were devised by a Roman Catholic priest (the Abbé Mastrofini) more than 100 years ago. Religion may rightfully be proud of its share in devising these one or two "World Holidays." They not only keep the calendar perpetual and true to the natural solar year, but would also invite greater world cooperation and amity.

In this new calendar Christmas Day will always fall on Monday, thus affording a perfect opportunity for religious preparation on Sunday, especially at the Sunday night or Christmas Eve service, and giving opportunity for social gatherings on Christmas Day itself after an appropriate morning commemoration.

A careful study of the proposed World Calendar instantly reveals its extremely human qualities. It arranges to have as many holidays as possible on Monday, thus providing for a longer week-end, and preventing the interruption which is inevitable when holidays come in the middle of the week. It wisely proposes, for example, that we return to the original date of Washington's Birthday, February 11, which in the course of his lifetime was changed to February 22 by the addition of 11 days when the Gregorian calendar was adopted by Great Britain and her Colonies in 1752. This would cause Washington's Birthday to fall on Saturday, February 11, followed by Lincoln's Birthday on Sunday, February 12, (celebrated on the next day, Monday) thus providing for a substantial holiday at the same time each year without the breaking up of two different weeks by the shifting birthdays of these two great patriots.

It is not strange that the movement for an improved calendar is rapidly gaining headway. At various meetings held in London, Brussels, Berne, and Paris, members of the International Chamber of Commerce, representing 25 to 47 nations, have gone upon record as favoring an improved calendar, and chambers of commerce, industrial associations, universities, and other societies of learning, have all demanded the assemblying of an international commission to deal with this problem which they have considered to be extremely urgent.

Churchmen are primarily interested in a fixed Easter which would permit all Christendom to observe this important festival on the same day. The result of careful scientific investigation gives us April 9 as the probable date of the first Easter Day. In our present calendar, Easter Sunday will fall on that date only twice in the next ten years, and after that, not at all for more than 60 years. How much better to commemorate Easter every year on the eighth day of April, the second Sunday in April, as provided in The World Calendar, and feel reasonably sure that it is close to the very day which is an anniversary of the great historic

event which gives Easter its profound religious and spiritual significance.

When the General Convention of the Episcopal Church met in Atlantic City in October, 1934, approval of the proposed World Calendar and this fixed date for Easter was given by an overwhelming vote in both the House of Bishops and the House of Deputies. It is true that at the Convention in Cincinnati in 1937 an unsuccessful effort was made to reconsider this action, on the ground, only, that the year of 13 months, as contrasted with a year of 12 months, had not been sufficiently considered. In the last three years, we have heard less and less of the proposal to divide the year into 13 months. The fact that 13 months are not divisible parts of the year, that they break the harmonious rhythm, disregard the equal-quarter section of the calendar, and change familiar days and dates of religious significance —all these have proven a formidable barrier against its acceptance. In contrast, the rhythm and harmony, order and balance, and ease with which The World Calendar responds to the various needs of our modern life, have lifted it far above any other plan.

The time is ripe for effective action. Let us hope that the religious forces of America, and indeed all the Christian Churches, may be sufficiently interested in the movement for a stabilized Easter and sufficiently convinced of its value in The World Calendar to arrange for a thoroughly representative conference, in the hope that in this time of war and world restlessness we may agree upon one unifying principle whose influence would tend to bring all the thought and work of the world into greater harmony, and help to prepare for a more righteous and orderly arrangement of all human affairs, which should follow or even precede and lead the way to a just and intelligent peace. Such a world religious conference of churches should not find it difficult to agree, and to prepare identical resolutions to be presented to the various religious bodies represented, bringing to Christianity a permanent date for Easter in an orderly system of Time.

Of course it will take time, but let it not take too much time. Those who are particularly interested in The World Calendar are hopeful that it may become effective by January 1, 1945. In that year Easter, in the new World Calendar, will be observed within one day of the 1944 date, April 9, namely, the new April 8, and thus come only one date earlier than the supposed historical date. An unusual opportunity, therefore, rests with religion to make effective this reform and demonstrate to mankind a *united* Christian purpose through the joint observance of a permanent Easter Day and a permanent Christmas Day to be celebrated respectively on Sunday, April 8, and Monday, December 25. It is the sincere hope of many that this desirable event will become an actuality by 1945.

EDITOR'S NOTE: The United Press surveyed Episcopal opinion before the 1934 Convention with the following result: 238 replies, 187 for World Calendar, 22 for 13-month, 210 for fixed Easter and 19 opposed. See *Journal of Calendar Reform*, 1934, page 120.

DO IT NOW

By Richard G. Bowman

Consulting Engineer

RECENTLY, while supervising the production of a large order of military trucks for a foreign power, I was asked to conduct members of that country's purchasing commission through the Detroit automobile factory where the trucks were being made. Like all visitors to the factory they were fascinated by the almost magical efficiency of the assembly line and remarked upon the precise timing with which its multitudinous functions were performed.

Though familiar with mass production methods they were nevertheless impressed as engine blocks, coming from another part of the plant on overhead cranes, were set down with clockwork regularity upon completed frames when these in turn reached a certain point in the assembly line; as magnetos, carburetors and transmission cases jumped into place on the motors, wheels were attached to the frames, then cabs; as, in almost less time than one man could assemble the parts of a wheel, a badly-needed truck rolled out onto the loading platform.

Back in my office, a member of the commission remarked on the efficiency which he had observed. Yet he could not understand why, in a set-up where even seconds were not wasted, there was going to be a delay of six days in the completion of the order.

Pointing to a calendar on my desk I explained that although an inaccurate clock would not be kept in the plant one minute, we were forced to hobble along with a calendar that never hit on all cylinders. I tried to show that although the various processes within the factory are governed by the clock, the production of raw materials and the manufacture and delivery of parts outside the factory are governed by the calendar.

The motors we had seen on the assembly line had been in one stage of manufacture or another for more than half a year. Various parts had been ordered from other concerns as soon as the blue-prints were completed. So, though the trucks were being put together in a week, they had actually been in production much longer. Ordinarily it is possible to compute just how long each of the processes in the manufacture of a truck will take. Knowing how long each process will take it is not difficult for engineers to coordinate the entire operation so that no time is lost. This is done by merely allowing "safety margins," a few days leeway for delays. But when an order is placed in haste and produced in haste, under the stress of emergency conditions, the entire picture is changed.

The case at hand is a good example. According to hastily-made plans the first truck was to have rolled off the line on Wednesday, August 7.

Because of delays in delivery of wheels, clutches and motor parts, production did not begin until Tuesday, August 20, two weeks behind schedule.

The building up of this long delay reminds me of the rider who was lost for want of a nail for his horse's hoof. If, for want of time, magneto coils cannot be completed, the magnetos themselves cannot be finished. Without magnetos motor assemblies cannot be made. And without assembled motors it is impossible to put into operation the final assembly line.

To go back to a particular example, the delay in delivery of the magnetos: these were ordered on Thursday, April 25, for delivery Wednesday, July 24. The plant had obtained delivery on comparable orders in 90 days before. It should have been possible again. But the supplier brought it to our attention that in this particular 90-day period there was a total of only 68½ days in which his plant operated. There were two days in addition to Sundays when his factory would be closed down—Memorial Day, which fell on Thursday, and Independence Day, which also fell on a Thursday. Besides, the efficiency lost in winding coils, a highly technical operation, before and after the two mid-week holidays would result in an additional day's delay. We finally settled on July 27 as the delivery date for the first completed magnetos, but this was a Saturday and they lay unused until Monday, the 29th. Six days after we had wanted them, the magnetos were ready for installation.

Part of this six-day loss was directly due to shortcomings of the imperfect and inefficient calendar. And this is only a single example of many "calendar" delays experienced on the job. I don't think a more forceful argument for immediate calendar reform than this could be given at a time when our country, besides producing vast amounts of military supplies for other nations, is engaged in a vast rearmament program of its own. Much has been said about "bottle necks" that exist in industrial production—the lack of skilled personnel, the shortage of facilities for making machine tools and so on. Millions of dollars and endless effort are being expended to get rid of these "bottle necks." One very important "bottle neck," an inefficient calendar (which frequently drops holidays in the middle of the week and otherwise meanders aimlessly along with unequal numbers of working days in its months and quarters), could be eliminated at almost no cost and with very little effort, and at a time when it is urgent to do so.

Revisions in the calendar have been made in previous ages—mostly under the stress of necessity. The Egyptians abandoned the lunar calendar for a solar seasonal one more suitable to their agricultural life which depended upon the accurate computation of the rising and falling of the Nile. Although this same need did not exist in Rome, it was essential to adopt an orderly and regular calendar for Roman use. The Egyptian calendar was therefore revised and adopted for Roman use under Julius Caesar, and endured more than 1,600 years until the time of Pope Gregory XIII.

Then because of a slight lag between the calendar and the seasonal year, repairs again became necessary. It is significant that no change has been made since then—though the civilization of the Western world has evolved from an essentially agricultural to an essentially industrial one.

Daylight Saving Time, initiated in another period of national emergency, went only part of the way. It adapted the day to better use for agricultural and industrial production. The World Calendar must now go the rest of the way, adapting weeks, months, quarters and the year itself to the new needs of an intensified Industrial Age.

BUSINESS AND PROFESSIONAL WOMEN'S APPROVAL

Report of the Calendar Reform Committee, National Federation of Business and Professional Women's Clubs, Inc. (From *Independent Woman*, August, 1940)

THE committee asked to study calendar reform gave serious consideration to this question and now reports its findings. First, it was of interest to your committee to note that the head of The World Calendar Association proposing the reforms is an American woman, Elisabeth Achelis. Our second discovery was the extent of the endorsement of The World Calendar Association's method the world around. To date it has been approved by 14 nations and endorsed by many organizations such as the American Association for the Advancement of Science, state and city Chambers of Commerce in the United States as well as influential British and Empire Chambers of Great Britain, the General Federation of Women's Clubs and the Labor Conference of American States held at Santiago, Chile, in 1936.

Perhaps our greatest discovery was the reforms which The World Calendar Association stands for and their importance to those of us who work in business. In this new calendar all the time-units are of equal worth and correlate with each other at the end of each quarter. It takes our year of 12 months, divides it into 364 days with an extra day (called Year-End Day) at the end of December. It also adds Leap-Year Day every four years. It proposes quarter-years of 91 days each or 13 weeks or three months, corresponding to the seasons. Each quarter begins on a Sunday and ends on a Saturday. No discrimination is shown the day, week, or month. Your committee was delighted to find that this new calendar was as much against discriminations as is our Federation.

The earliest time when The World Calendar could be put into active operation easily is 1945. The last day of the preceding year, 1944, falls on Sunday. By considering that day as Year-End Day, placed on an extra Saturday, our calendar would read like this: December 30, 1944 would be a Saturday in both the present and the new calendars. The next day, being the old Sunday, December 31, would become "Year-End Day," an extra Saturday. The following day would be Sunday, January 1, 1945, under the new calendar. Could any change from old to new be simpler and easier than this?

Your committee wishes to recommend: 1. That the National Federation of Business and Professional Women's Clubs, Inc. endorses the calendar reform on the perpetual 12 month plan of equal quarters, known as The World Calendar and requests the United States Government to cooperate with other governments in bringing about calendar reform with a view to making The World Calendar internationally operative whenever the time for such cooperation is deemed proper by government officials.

Adopted

Respectfully submitted,

EFFIE ROGERS, Chairman

AGNES MANTOR, EMILIA KENNEDY.

TIMEOLOGY

Address on Timeology Day, at the New York World's Fair, September 1, 1940

By ELISABETH ACHELIS

President, The World Calendar Association

RADIO has been the outstanding influence in making us all time-conscious and it is also making us alert to the real significance and value of time. Mark Hawley, the nationally known news commentator, estimates that one minute of radio time is worth $180. Now if one minute is so costly, would it not be well for all of us to check our clocks for accuracy and to have a keener appreciation of time?

Today, a clock that is an accurate and orderly time-keeper is more valuable than the costliest ruby or diamond. In fact, the clock and the radio are indispensable team-mates. On their complete agreement depends the success of a broadcast. If, then, the accuracy and order of the clock are so valuable to radio, they must have an equal value as well in many other activities in which we are engaged—and in life itself!

But there is another vital factor in the realm of Time, and that is the calendar! It comes as a distinct shock to many of us to realize that the calendar, with which we are all so familiar and which we use every day of our lives, is just the opposite from the orderly clock. The calendar is everything it should *not* be; it is a vagrant and a waster, for nothing in it fits. We all know how month-dates and weekdays play a wild-goose chase with each other, year after year; they never agree!

Tomorrow is Labor Day, the first Monday in September, that pivotal day around which summer vacations end and school terms begin. This year it comes early on September 2, but when did it fall last year; and when will it fall a year hence, or in two or three years? We never know. We glibly say "the first Monday in September," but what about the date? It may have as many as seven different dates on which it can fall—from the 1st through the 7th of September. Our changeable calendar of today has months of four different lengths, 28, 29, 30, or 31 days, and these never begin on the same day of the seven-day week. Months may have four or five Sundays, Mondays or Fridays. We say Thanksgiving falls on the last Thursday in November, but it may fall on the fourth or the fifth Thursday (or as our President has changed it, the third or fourth). All this uncertainty has its natural reaction in our lives; on business, transportation, vacations, schools, social engagements, civil and religious holidays.

Just imagine, if you can, what it would be like if our clock had different lengths of hours for morning, noon, afternoon, or evening. What frantic moments we would have in telling time! Yet this is what actually happens in our present-day calendar—most confusing and bewildering, isn't it?

The purpose of improving our present unsatisfactory system is to give it the same order and stability which exist in the clock. I believe you will all agree that this is plain common-sense. And, because it is common-sense, the changes, too, should be sensible and simple. There is nothing drastic or revolutionary about the improved World Calendar.

In The World Calendar the customary 12-month year is retained but divided into equal quarter and half-years. Each quarter-year has its familiar three months, with the months, however, more equally apportioned: the first month always has 31 days and the other two, 30 days each. With every quarter beginning with Sunday and ending with Saturday, each has exactly 91 days, or 13 weeks or three months. And because every one of the four quarters is identical in arrangement, year in and year out, the calendar will be every year the same. But you will say that quarters of 91 days each give the year only 364 days. I will speak on this in a few minutes.

In this orderly calendar month-dates and weekdays will always agree. The weekday will at long last come into its own and be no longer the neglected Cinderella of the calendar. Historical events and personal anniversaries will be remembered as to *day* as well as date, month and year. How gratifying it would be could we have had the complete recording of our Independence Day with its weekday instead of only July 4, 1776.

And then, too, we would be more accurate with our own birthdays which are not really birthdays at all but birth-dates. Christmas in the new calendar would be always Monday, December 25. And a fixed Easter date, too, would be possible, but that is a matter for the churches.

The World Calendar will have the same simple order and dependability as the clock has. And here we have two perfect instruments of timeology. The clock, the smaller of the two, begins immediately after midnight and ends on the stroke of 12 (midnight) and consists of three important divisions: seconds, minutes, and hours. It never varies. The calendar, the larger instrument, begins in The World Calendar with Sunday, January 1, and ends with Saturday, December 30, also consisting of three important divisions: days, weeks, and months. It, too, is perpetual.

But here our analogy must end. For the day of 24 hours is divisible and complete; whereas the year of 365¼ days is *not* divisible and is incomplete. What *is* to be done with that necessary 365th day and the fractional day which, in four years, becomes the 366th day in leap year?

Back in 1834 a priest, Abbé Mastrofini, solved the difficulty. The 365th day every year is placed on an extra or double Saturday immediately following Saturday, December 30, and just before Sunday, January 1. It is a Year-End World-Holiday. And the 366th Leap-Year Day is placed in the mid-year, immediately following Saturday, June 30, and just before Sunday, July 1. It is another World-Holiday, the Leap-Year Day, whereby the calendar achieves a perfect balance. For the first time in calendar history, the calendar will have one or two World-Holidays—holidays on which the entire world may come together in amity, understanding, cooperation. What a glorious outlook—to have all nations, races, governments, peoples, and churches observing one and the same holiday throughout the world every year and an additional one in leap years: holidays of civic observance, of spiritual values, joy-giving, of forming

friendships and of uniting all the various countries on these world days.

With The World Calendar in operation all nations would speak the same time-language, and speaking the same time-language, would beget a closer understanding. Such a timeology is priceless and will pay untold dividends of happiness and satisfaction.

Yes, you may say, all this is very fine, but when and how can we have it?

It is just as easy of adoption as is the arrangement of The World Calendar itself. For simplicity of one kind makes for simplicity of another.

Naturally, we wish to make the transition easy. The perpetual World Calendar of 12 months and equal quarters can be introduced when either the beginning or the closing of the present calendar falls on the same day and date with the new one, so that the old calendar would merge with the new with no confusion whatsoever. Such a date is Saturday, December 30, 1944. On that day, date and year, both the old and the new meet. The following day in the old calendar, Sunday, December 31, would then become the extra Saturday, the "Year-End Day." This new World-Holiday (tabulated either December Y or 31) would then be followed by Sunday, January 1, 1945, of the new World Calendar.

Fourteen governments have officially approved it; and were the United States to join we might be assured that The World Calendar would be virtually adopted. In the past, calendar reforms were inaugurated by countries in the Eastern Hemisphere, but with war clouds hanging heavily over there, we have every reason to believe that the Western Hemisphere will take a hand and the United States be the leader.

The United States could easily call an international conference on this universal and non-partisan subject, for, like Time itself, the calendar recognizes no discrimination or partiality. It belongs to every man, woman and child of every land, and unites us all under one common-bond-of-time.

At such an international conference a treaty would be drawn up for approval by the various nations. And taking the adoption of the Gregorian calendar as a precedent, it is not essential to have world unanimity, although, of course, the greater the number of nations to ratify it, the more general would be its adoption. Toward this accomplishment it is very essential for all of us, individualy and in groups, to speak, wor k, or write for The World Calendar. We should impress upon our Government, through the State Department or the President, the importance of calling such an international conference for 1942, certainly not later than 1943.

The treaty issuing therefrom, being international in scope, would not require individual voting on Election Day, as it is within the jurisdiction of the Senate, State Department or the President. Were we all to do our part in impressing and urging upon our Government to act favorably, we would by 1945 be using and living under this better calendar—a forerunner, I believe, of happier days to come.

PRINTING—CALENDAR'S SLAVE

By Joseph Guiney

Chilton Company, Printing Division, Philadelphia

A CAREFUL study of the printing and publishing field will show definitely that one of the gravest problems confronting production is the complexity of the present calendar. This is due to the irregular arrangement of uneven months; and, year in and year out, there is this continued disorder that makes the printing industry the slave of the calendar. On the other hand, a close scrutiny of The World Calendar shows clearly that its adoption would be a long-awaited boon to the printing and publishing fields and to many other industries that depend upon printing, advertising and the spread of information and knowledge for their success.

There is a great principle in the printing industry which takes root in the imperishable fact that no other industry can exist successfully on any large scale without the use and force of the printed word.

From the time that Johann Gutenberg first cast movable type and brought education and knowledge to the masses, a sluggish, sleepy world, groping blindly for expression and individual thinking, has slowly awakened to the tremendous power of type, ink and paper. Even in war and in invasion, the opposing forces distribute literature and propaganda from the skies, each pointing out, in turn, the advantage to the individual that would be his should he assist the particular distributor.

Today giant presses rumble and roll steadily and swiftly, and their products take many forms. Most powerful of all is the daily newspaper in the forming of opinions, political and otherwise, and bringing news from every part of the globe. Not only can the newspaper be read at the breakfast table, but earlier issues of the morning editions are on sale at nine P. M. of the previous evening. Speed in news is vital, and in this, the radio is faster in its news-casting, but for the full details and more permanent form to be had at your leisure and convenience, plus other general news and advertising, the daily newspaper is indispensable. In all this matter, the calendar is essential, for a newspaper that is one day old reduces its value by at least 50 per cent. The right-up-to-date issue is the life blood of the daily paper.

We have, of course, the periodical field for other news that need not be "spot" news. Weekly publications combine fiction, short stories, news articles, foreign articles, editorials and advertising. There are trade papers galore—several for each industry—some appearing weekly, others semi-monthly and monthly. Technical papers are published also for the engineers or experts in many lines and there are publications for every walk

in life and for every human endeavor. Each progressive step, each new invention, each streamlined shortcut is duly recorded for each industry for the benefit of the reader and for the advancement of production by universal acceptance of new ideas. Current prices of raw materials, future trends, and new markets, all have a commanding effect on volume and sales.

In a busy printing office and plant where hundreds are employed, it is necessary to schedule all phases of work to keep production moving at a high rate consistent with quality. A man may build a house to specifications and plan; or he may make a suit of clothes to order, but should a whim or passing fancy possess the buyer's mind, he may refuse to accept either the house or the suit. However, all is not lost—there are other buyers and the house and the suit will be sold eventually. This is not so, however, in printing. It is a made-to-order business, true enough, but there is only one market after the work is completed—the original customer. No other can find use for the product, so that far more than ordinary care and vigilance must be exercised in its perfect fulfillment of an idea, because printing only exists in dummy form until finally produced.

In the manufacture of printing on a scheduled basis, it is necessary to work backwards when preparing a schedule. Thus, in order to have a periodical reach its readers on the Pacific Coast on the first day of the month, it should be mailed four working days earlier. It should be folded, gathered, stitched and covered in the morning; wrapped and bagged for the mails, and delivered to the post office in the late afternoon. Printing should take place the day before binding and if color is employed, an extra day is often necessary. Therefore, forms have to be locked up the day before printing, or the night before going to press. Then a deadline must be set on final O. K.'s from the editor, a last date for receiving advertising, a date for receiving the pasted-up dummy which is followed when the pages are made up. A schedule, therefore, would look something like this:

Final text copy	18th
Final adv. copy	18th
Makeup dummy to printer	20th
Final color O.K. printer	24th
Final stone O.K. printer	25th
Last form to Press	26th
In Bindery	27th
Del'd to Post Office	27th
Arrive Pacific Coast	1st

These dates are flexible depending on the number of pages and the quantity printed. This type of schedule is a fair average in ordinary plants. In extremely large plants, a shorter span is possible, but in a majority of cases, this would be considered as a reasonable program. The printing industry is a helpless slave to the calendar, and when, in addition, the calendar is a faulty and unnatural taskmaster, many arduous problems arise continually. As each schedule nears completion, each hour becomes

more and more important and lost time is more difficult to overcome.

It does not take imagination to appreciate the tremendous advantage that the new and perpetual World Calendar would bring to befuddled printing superintendents who are continually trying to overcome holidays and uneven months. On five-day-week production, which is made necessary by 40-hour-week laws, binderies are frequently closed on Mondays.

Presses are shut down after the Friday night shift is finished, but the bindery workers work all day on Saturday and clean up all material that has been printed up to and including Friday night. The bindery therefore closes down on Monday all day. This means that if a periodical is unfinished on the presses on Friday night, double-time rates must be paid to pressroom help on Saturday to catch up on presswork and this expense is wasted should it be impossible to get the work out on Saturday. Such sheets are not entirely dry and smudging may result when folding.

There are also certain union regulations forbidding members to work more than a certain amount of hours overtime. If they exceed this amount, they are required to take time off and put on a substitute. This is an excellent idea to equalize wages, but the "sub" loses time familiarizing himself with new surroundings. The hours of women workers are regulated by law and no extension is permitted.

The irregular appearance of holidays has worked havoc with schedules particularly at month-ends. When it is realized that hours are precious at the tail-end of the schedule and that each operation must take a fixed number of hours, it can be appreciated why a regular stabilized form of calendar such as the equal-quarter, 12-month World Calendar would be a great boon to such an industry.

With the definite knowledge of every working day in each quarter, work would not only be scheduled—it could be synchronized and comparisons of production records could be made much more intelligently. The maintenance and study of such records are the entire basis of successful operation and do much to keep costs from rising by eliminating loss in hours. If a press stands idle after the completion of one order, because a form for another publication is not ready, that lost time is lost money. The press is there, the pressman and his assistant are ready and are being paid and they often are forced to put a form to press with "holes" in it; that is, without a final O.K., or with certain illustrations still missing to prepare the make-ready as far as possible in trying to maintain a schedule that may have failed for any one of a hundred reasons.

Commercial printing varies from publication printing in several ways. Catalogs and mailing pieces are carefully prepared for specific purposes. In most instances, their principal reason for existence is to sell a product. Anyone who has cooperated with advertising production men will recall the feverish speed that is necessary to produce printed pieces that will tie in with other advertising—whether radio, newspaper, publication or the like. It would be embarrassing to receive coupons clipped from publications requesting a booklet which had not been completed by the printer. Therefore, to synchronize all activities, such advertising campaigns often call for the mailing of a series of pieces at regular intervals. It is not considered advisable to have these arrive on certain rush days of the week as they would have to compete for attention with other printed matter. It is not good practice to send them at the time the prospect is receiving monthly bills from other sources as such competition is a doleful reminder of the necessity of foregoing necessary purchases to pay current expenditures.

Studies have been made under varying conditions to discover the day when the mail is lightest. When such a date is finally determined, we will find after a short

while, that everyone is scheduling their mailings to arrive on that particular day and it eventually becomes the most congested day.

Let us assume, however, that Monday is accepted as the best day of the week to deliver a printed piece to a prospect. If we eliminate the Monday right after the first of the month as being too near to the first, we must eliminate the Monday before the end of the month for a similar reason. This leaves the second and third Mondays as more ideally suited to our advantage. The present irregular calendar definitely prevents an intelligent and orderly arrangement of mailings that are specifically intended to break down sales resistance and induce the prospect to buy the product.

An orderly arrangement as set forth in the permanent World Calendar would easily fit into such schedules and would simply be a repeat performance on a quarterly basis. It would relieve the tension and uncertainty of the present calendar and the results should be so greatly improved from a selling standpoint as to definitely prove its worth.

Like a finely made watch, each part would fit into its place, and the whole would coordinate and work in unison for perfect performance, delicately balanced and finely adjusted for exact regulation. In like manner, many advertising schedules would fit together in one comprehensive plan, and would be particularly simplified because of the synchronization of the various time-units of this proposed World Calendar, not only in the beginning and ending of each quarter but the entire year itself. In many industries, time is the precious item and many hurried and tardy operations can be traced to obsolete and irregular calendar schedules.

Many national advertisers place advertising in small country weekly newspapers. The country weekly local newspaper is strictly a community record and neighbors and townspeople find out what has happened locally only through the village paper.

The financial backbone of the country weekly is advertising, and the difference between success and failure is the pick-up of a small amount of national advertising. This takes the form of nationally advertised products which may be sold locally by an agent, such as an automobile; or through general store sales, like soft drinks, breakfast foods, patent medicines, and so forth. The rate on this advertising is good depending on circulation, and a matrix is furnished usually. This saves money for the publisher as he does not have to set any type and needs only to mold the "mat" into metal form, and insures the advertiser that the type format will be exactly as he wishes it to be.

Because the country publisher is keen to run such material, he is constantly in touch with the advertising agency to find out what schedules have been made up wherein he is included. In many instances, where chain store advertising is involved and where several units are priced, last minute price changes are marked in red pencil on the face of the mat itself. This means that, after the printer has molded the mat, he must take the casting and saw into it at various spots and correct the prices by hand.

This will indicate the confusion that frequently results when press time is here and there has not been sufficient time to permit the advertising agency to correct the type, mold new mats and get them to the country printers on schedule. If these troubles are traced back, it will be found on numerous occasions that uneven month-endings are responsible, as many price corrections are due to advancing costs on commodity deliveries subject to periodical price changes and that such changes may appear at unexpected and irregular intervals, thus disturbing existing arrangements.

Printing has been called "the Mother of PROGRESS," and as such would gladly welcome this new ally of time with open arms. The quality of work produced on a more even schedule would be further improved and every craftsman engaged in the various branches of printing and its allied industries would be greatly benefited.

There is no question that a stabilized calendar, as proposed by The World Calendar Association, would be a tremendous improvement in this great industry and would be of immeasurable benefit to other industries.

"THE HEAVENS DECLARE"

By Dr. Roy K. Marshall

Assistant Director, Fels Planetarium, The Franklin Institute, Philadelphia

(From a Holiday Demonstration in the Planetarium, December, 1939)

THE Christmas story is one familiar to us all. In fact, it is introduced into our lives so early, and becomes so thoroughly ingrained, that only occasionally does someone think to compare it with the sacred legends of other religious philosophies. Our own scholars probe the sacred writings and other relics of other religions, some vanished and some yet flourishing, but few of us realize that the Christian religion, in spite of its comparative youth, offers an opportunity for similar research. Its early development among hostile creeds has resulted in many points of confusion.

On December 25 of each year, many of us share a festival which commemorates the birth of Jesus of Nazareth. We speak of this year as 1939 A. D.—*Anno Domini*, the Year of Our Lord—yet, we are uncertain not only of the day of the birth of Jesus but even of the year! That we should not know the day is perhaps not surprising when we realize that the teachings of Jesus did not achieve official recognition for three centuries, when, by an edict of Galerius in 311 A. D., Christians were granted religious freedom in the Roman Empire. The early history of the Church, as well as the early life of Jesus, was passed along by word of mouth, and we have no reason to believe that such transmission of information was then any more reliable than it is today. But surely we might be expected to know the correct year!

What evidence can we call on to assist us in determining the date of the birth of Jesus? There are, of course, the accounts of His birth in the Gospels. A Jewish tentmaker of Tarsus, named Paul, had written many letters in Greek and these circulated among his followers to tell of the teachings of Jesus. At the same time, a story of the life of the Master was written in Aramaic, the language Jesus had spoken, but this was lost. Other accounts, written in Greek, appeared until there were four widely popular stories of the life of Jesus. These, which we now recognize as the Four Gospels, along with the letters of Paul and certain other material, were combined later in a Greek book which, in the English translation, we know as the New Testament.

From these Gospels, we have certain indications of the time of the birth of Jesus. In *St. Matthew* it is said to have occurred "in the days of Herod the king" who, according to Josephus, the Jewish historian, died in 750 a.u.c.* (4 B. C.) a few days after an eclipse of the Moon visible from Jericho and a few days before the Passover. The only eclipse ful-

Ab Urbe Condita—From the founding of the city [Rome].

filling these conditions occurred on March 13, 4 B. C. The evidence of this statement in *St. Matthew* leads inescapably to the conclusion that Jesus was born prior to this date. This is supported by our knowledge of the error made by Dionysius Exiguus when, in 533 A. D., he attempted to establish the date of the beginning of the Christian Era. He found that, according to Clement of Alexandria, Jesus was born in the 28th year of the reign of Augustus Caesar, or 754 a.u.c. But he counted the reign of Augustus from the date of his having been given that title and not from the date 723 a.u.c. when Augustus, as Octavian, defeated Antony and Cleopatra at Actium. According to this reckoning, Christ was born in 4 B. C. But in *St. Luke* we find that "in the fifteenth year of the reign of Tiberius Caesar. . . . Jesus himself began to be about 30 years of age." If we omit the word "about," it puts the birth of Jesus at about 2 B. C. We know the date of the accession of Tiberius from the fact that a lunar eclipse (that of September 14, 14 A. D.) is said to have followed the death of Augustus by about a month.

We have read that "there was no room for them in the inn" for the census was being taken and taxes were being collected, and all Jewish men were to go to their home districts to be registered. There is no evidence in Palestine for the dates of these tax collections, but in Angora, Turkey, in 1923, a temple inscription was translated and found to tell that there was such a collection ordered in 28 B. C., a second (during the consulship of C. Censorius and C. Asinius) in 8 B. C., and a third in 14 A. D. (in the consulship of Sex. Pompeius and Sex. Applieius). Unless the collection was delayed in Palestine, this indicates that Jesus may have been born as early as 8 B. C. Other evidence places the date as early as 11 B. C.

We must confess then that we do not know the year of the birth of Jesus. How about the day, or at least the season? We have little evidence on this point. "There were in the same country, shepherds abiding in the field, keeping watch over their flock by night," which would indicate that if these ancient shepherds had the same habits as those of more recent times, it may have been early in the Spring, for it is only then that the flocks are watched at night. The early Christians celebrated the Nativity, the Epiphany, and the Baptism together on January 6. But the Romans had the festival of the Saturnalia to celebrate the time when the Sun has gone farthest south and begins to return December 25 at that time, December 22 now. The period from December 14 to December 27 was a time of good feeling when even the slaves were permitted some small measure of freedom. It was celebrated in Persia as the nativity feast-date of Mithra, the Sun-King, and the Emperor Aurelian, about 275 A. D., designated the date as *Dies Natali Invictus*—the "Birthday of the Unconquerable (Sun)." The Venerable Bede states that to the Angles December 25 was *Madranecht* or "Mother's Night."

A week later the Romans celebrated the Kalends, or the beginning of January, the New Year, with feasting, decoration with evergreens, and exchange of gifts. Gradually this became a very riotous holiday time, as it is yet with us, and the early Christians despaired of a sober celebration of the Nativity on January 6. For this reason, Christmas was separated from the Epiphany and moved back to December 25. It was necessary, however, as late as 729 A. D., for Pope Zacharius to forbid the Kalends form of celebration at Christmas. Various other elements have crept in to make up our modern celebration. Druid worship—the Tree of Life—has come in in the form of the Yule Log. Holland contributes the Santa Claus; as has been noted, the Romans decorated with evergreens.

But what was the Star of Bethlehem? The question is often asked of astronomers, but the answer, which is seldom considered satisfying, is that there is no astronomical record of a star as described literally in the Gospels, but that it may have been one of several phenomena, depending upon the exact date of the birth of Christ. For example, Halley's Comet was visible in 11 B. C., and presented a striking sight as it hung for many nights almost overhead in the neighborhood of the Mediterranean. If we can permit the sign of the coming of the Messiah to have appeared as early as this—if, perhaps, Jesus was born as early as 11 or 10 B. C.—this could have been the Star of Bethlehem. There is also a Chinese record of a comet from February through March, 4 B. C. The use of the word "star" should not be permitted to limit our choice, for in those early days, planets and comets, as well as the extremely distant objects which twinkle in the sky, were called "stars." A planet was a "wandering" star, hence our name for such a body, from the Greek word *planetes*, meaning "wanderer." A comet was a "hairy star" and we get our name for such a body from the Latin word *coma* meaning "hair."

Perhaps an even more transient phenomenon, such as a fire-ball or bright meteor, might have been accepted as the sign.

There are observed, however, "new" stars which burst out suddenly where no star was previously visible to the naked eye. They are not strictly "new," for modern photographs show that such a phenomenon is merely the sudden brightening of a star which was previously inconspicuous. Such a star, as bright as the planet Venus, was seen by Tycho Brahe, the Danish astronomer, on November 11, 1572. One not quite as bright was observed by Kepler on October 10, 1604. Kepler it was who suggested that such an occurrence might have been the Star of Bethlehem.

But another phenomenon appealed to Kepler as a possible explanation for the miraculous star, for in the middle of December of 1603, Jupiter and Saturn had stood close together in the sky and had presented a striking sight. They withdrew from each other slightly, then stood again in conjunction in the Spring of 1604, when a third planet, Mars, joined them.

Kepler possessed the mathematical ability necessary to compute the frequency of occurrence of such close approaches of planets in the sky, and found that it is repeated, for Jupiter, Saturn and Mars, about each 805 years. One previous apparition was in 7 B. C., and this fits fairly well with one of the census-taking dates, delayed by a year or two in Judaea.

The close approach of Jupiter, Saturn and Mars in 7 B. C., and a similar grouping of Jupiter, Saturn and Venus in 6 B. C., occurred in the constellation of Pisces, the Fishes, a sign of the zodiac which was early associated with the destinies of the Hebrew people, as was the planet Saturn. As a matter of fact, the 15th Century scholar, Isaac Abravanel, in his commentary on the book of *Daniel,* entitled *Mayyene Ha-Yeshu'ah,* came to the conclusion that an early conjunction of Jupiter and Saturn in Pisces had preceded by three years the birth of Moses; another such event would precede the coming of the Messiah, predicted by Abravanel for 1503.

These, then, are the choices which the astronomer offers for the Star of Bethlehem—a comet, a meteor, a new star, or a planetary conjunction—but there are those who prefer to believe that it was a miraculous apparition, perhaps visible only to those who were watching for the sign.

Whatever the sign may have been, we are told that "when Jesus was born in Bethlehem of Judaea in the days of Herod the king, behold, there came wise men from the east to Jerusalem, saying, Where is he that is born King of the Jews? for we have seen his star in the east, and are come to worship him."

The Wise Men, or Magi, lived east of Judaea, in the part of the world called Media (now Persia). They were the diviners, astrologers, and priests of the religion of Zoroaster, one of the noblest philosophies man has ever had. The teachings of Zoroaster had foretold the coming of a Messiah, and had related that there would be a sign. The Magi—Kaspar, Melchior and Balthasar—looked for the sign and saw it in the "Star." This led them westward from their homes until they came to Jerusalem, whence they followed the gleam of the Star of Bethlehem. "And when they were come into the house, they saw the young child with Mary his mother, and fell down, and worshipped him: and when they had opened their treasures, they presented unto him gifts; gold, and frankincense, and myrrh."

AMERICAN PSYCHOLOGICAL ASSOCIATION

THE American Psychological Association at its meeting at State College, Pennsylvania, September 5, 1940, approved The World Calendar. The Committee under the chairmanship of Dr. H. B. English and with Dr. E. B. Delabarre as an added member secured the passage of the following resolution:

> The American Psychological Association at its 1940 Annual Meeting joins with other scientific societies in expressing approval of the World Calendar; it urges the national government to take leadership at appropriate time to secure world-wide adoption.

A MOST INGENIOUS PARADOX

By WADE POSTON, JR.

THE YEAR 1940 marks the maturation of one of the world's most curious and celebrated literary romances—that of Frederic and Mabel in the Gilbert and Sullivan operetta *The Pirates of Penzance.* The peculiarly inflexible logic that governed the plots of so many of the works of Gilbert and Sullivan was given its only setback when they based a play upon the complexities of the Gregorian calendar. Frederic was a lad who in his infancy was mistakenly apprenticed to a pirate—instead of to a *pilot*—by his nurse who was hard of hearing and misunderstood the instructions given to her by his father. The play opens on the occasion of Frederic's twenty-first birthday, at which time his apprenticeship ceases. He astounds the pirate band by telling them that, although duty has compelled him to serve them faithfully as long as he was their apprentice, he intends to take up arms against them and exterminate them as soon as his indentures have expired.

At this point in the story, the illustrious Major-General Stanley and his daughters arrive upon the scene. The General has bought a baronial estate upon the coast of Cornwall, near the pirates' den, and has come to occupy it. He and his daughters are seized by the pirates in spite of Frederic's attempt to warn them. The pirates threaten to marry the fair maidens. The General saves himself and his family by professing to the pirates that he is an orphan. By this means, the pirates are temporarily vanquished. However, Frederic is no longer a member of the band, and a romance blossoms between him and Mabel, the best and comeliest of the General's daughters. The General's conscience pains him because he has escaped the pirates by a falsehood, and he determines to seek them out and give himself up. Frederic stops him by saying that he is waiting for reinforcements before he sets out to slay his former comrades. At this juncture, Frederic, left alone upon the stage, encounters the Pirate King and his old nurse, Ruth, allied with the pirates. The king slyly tells him that a "most ingenious paradox" has occurred—which he explains in the following words:

> "For some ridiculous reason, to which, however, I've no desire to be disloyal,
> Some person in authority, I don't know who, very likely the Astronomer Royal,
> Has decided that, although for such a beastly month as February, twenty-eight days as a rule are plenty,
> One year in every four his days shall be reckoned as nine-and-twenty.
> Through some singular coincidence—I shouldn't be surprised if it were owing to the agency of an ill-natured fairy—
> You are the victim of this clumsy arrangement, having been born in leap year, on the twenty-ninth of February,
> And so, by a simple arithmetical process, you'll easily discover,

That though you've lived twenty-one years, yet, if we go by birthdays, you're only five and a little bit over!"

The crucial point in the plot is revealed in the following dialogue:

KING. I'm afraid you don't appreciate the delicacy of your position. You were apprenticed to us—
FRED. Until I reached my twenty-first year.
KING. No, until you reached your twenty-first *birthday*, and, going by birthdays, you are as yet only five-and-a-quarter.

Since the wording of his indentures again binds him to the pirate crew, Frederic submits and reveals to the king that General Stanley had saved himself and his daughters by an untruth. He then returns to tell Mabel that he is still bound to serve the pirates. The play proceeds as follows:

FRED. A terrible disclosure
Has just been made! Mabel, my dearly-loved one,
I bound myself to serve the pirate captain
Until I reached my one-and-twentieth birthday—
MABEL. But you *are* twenty-one?
FRED. I've just discovered
That I was born in leap year, and that birthday
Will not be reached by me till 1940.
* * *
In 1940 I of age shall be,
I'll then return, and claim you—I declare it!
MABEL. It seems so long!
FRED. Swear that, till then, you will be true to me.
MABEL. Yes, I'll be strong!
By all the Stanleys dead and gone, I swear it!

The operetta ends on a note of doubt. The pirates are discovered to be noblemen "gone wrong," but one feels that Frederic, the slave of stern duty, will not consider himself wholly free and worthy to marry Mabel until his indentures have incontestably expired. According to the operetta, this happy event took place some months ago, on the 29th of February, 1940, and the long-separated pair are now united.

The plot of this comedy contains several faults, all of which arise from its dependence on the calendar. The play was first produced April 3, 1880, at the Opera Comique. However, this cannot be considered as the time represented upon the stage, since it would be impossible for anyone to be 21 years of age in 1880 who had been born during a leap year. Thus, we must assume that Frederic was born on February 29, 1856. Adding 21 to this figure, we arrive at 1877 as the date represented upon the stage. If this is the case, and Frederic was born in 1856, then the calculations of the writers were incorrect. Frederic would have his twenty-first birthday not in 1940, but in 1944. In fixing the date of Frederic's majority, Gilbert and Sullivan neglected the fact that 1900 would not be a leap year. This is because the leap-year system requires that the extra day be omitted every century year (unless divisible by 400), in order to reduce the error between sun-time and calendar-time to a minimum. Doubtless, the heartless

Pirate King has since discovered this fact and condemned Frederic to wait four years more before he can be joined to his loved one!

The plot of the *Pirates of Penzance* suffers in other respects from the introduction of the calendar. A great point is made of the exact hour at which Frederic's apprenticeship ceases. In the opening lines, the king presses Frederic for information on how to make piracy pay better, and on being refused, replies: "Why not, my boy? It's only half-past eleven, and you are one of us until the clock strikes twelve." All that can be inferred from this is that Frederic customarily celebrated his birthday on the 28th of February, and that the play opens on the night of the 27th. It is difficult to see why the "ingenious paradox" should not have occurred to the king earlier in the play.

It has already been demonstrated that the date of the play was 1877, that Frederic was born in 1856, and that the librettist was incorrect in establishing his twenty-first birthday as 1940. Against this, it is argued that Frederic's birth took place in 1852, and that the date of the play was intended to be 1873. If this were the case, then Gilbert and Sullivan would have been correct in saying that Frederic would be 21 in 1940. One line tends to disprove this. General Stanley introduces himself:

> "I can tell undoubted Raphaels from Gerard Dows and Zoffanies,
> I know the croaking chorus from the *Frogs* of Aristophanes,
> Then I can hum a fugue of which I've heard the music's din afore,
> And whistle all the airs from that infernal non-sense *Pinafore*."

The word *Pinafore* was a reference to the previous success, first produced at the Opera Comique on May 25, 1878. Now, even supposing the date of the play to be 1877, the General's reference is already anachronistic—since no one possibly could have been whistling the airs to *Pinafore* until its first production a year later. The General's foreknowledge is excusable on the grounds that he himself was a Gilbert and Sullivan character and that he learned the airs while both he and *Pinafore* were in embryo. But the anachronism is obviously increased, if we set the date of the play at 1873 in order to compensate for Frederic's mistaken maturity.

At any rate, there can be little doubt that, despite the care that must have gone into the construction of the *Pirates,* the complexity of the calendar fooled Gilbert and Sullivan in several ways and was responsible for what is perhaps the only unsound plot in the entire list of their works.

READY-REFERENCE CALENDAR FOR 1941

THE issuance of a ready-reference calendar card for 1940 was so successful that we have decided to print and distribute a new one each year. Similar to last year's yellow card, the new green one depicts The World Calendar with its advantages, and the present Gregorian calendar for 1941 with its disadvantages.

Your copy is attached to this Journal. Additional cards can be secured without cost by addressing a request to The World Calendar Association.

SKY CLOCKS AND CALENDARS

By Professor William H. Barton, Jr.

Executive Curator, Hayden Planetarium, New York City

(From *Sky*, September, 1940)

IT is largely an accident, this measuring of time. Timekeeping is of the earth, earthly. Pick man up and transfer him to Venus, or Mars, or Jupiter, and his clocks and calendars go into the scrap heap. Time, in its philosophical concept, may be universal, but the measurement of time from the practical point of view depends upon where you live.

On Mars the year would contain not about 365 days, but about 687. Those days, moreover, would be over a half hour longer than ours. Surely the Martians would have an even number of hours in their day, so the hour would be longer than ours, *if* they had 24 as we have. That "if" tells us a story. Some time-units, like the hour, are arbitrary, but others, like the length of day or year, are not. You notice nothing was said about "if" in describing the day and year.

On first thought the measurement of time may seem as simple as the measurement of space, but it is not. To measure the length of a room we use a foot rule or yardstick, and by finding how many times that unit of length is contained in the length of the room, we announce the result to be so many feet or yards. Perhaps the foot rule was used nine or ten times in measuring the room. In the measurement of time we cannot use the same unit more than once. We may use the swing of a pendulum to measure a second, but once the second is measured, both the interval and the measuring unit are gone. To measure the next second we must create another unit just like the one that has gone into the past. A timepiece, then, is a device for making uniform intervals of time in constant succession. And that's where the earth comes into the problem. It is so regular in its spinning and its trip around the sun, that it is our best timepiece and all others made by man's hand are ultimately referred to it.

These motions of the earth are most evident to us by changes that we can see in the heavens. We might call them motions of the earth reflected in the sky. The sky is a great clock-face and against it moves an imaginary hand going around once a day. This hand is the meridian, a line running from north to south through the point overhead.

To measure time by the stars let us forget for the moment that it is really the earth rotating, and consider as real the apparent motions of the heavenly bodies. If we watch a certain star tonight as it crosses our meridian and then again tomorrow night, the interval between the crossing is one sidereal day (except for a correction of a small fraction of a second due to precession). This is the kind of time used principally in

astronomical observatories. It has its own hours, minutes, and seconds. Each observatory on a different meridian, such as London, New York, Chicago, and other places, has sidereal time that will agree with none of the others. This might seem confusing until we remember that the difference in time between two observatories is a measure of their distance apart in an east-west direction. That is longitude really, and the scheme offers a very exact method of determining the longitude of various places.

By common agreement, when the Vernal Equinox crosses an observer's meridian he sets his sidereal clock at 0 hours, the beginning of a new day. The hours in this astronomical day are numbered from 0 to 24. There is no a.m. or p.m. as we have in our common clock usage.

Suppose we observe a star crossing our meridian just before the dawn is lighting the sky. And suppose we make this same observation night after night. It is soon evident that the meridian passage, or *culmination*, as it is sometimes called, is coming earlier, well before the dawn. In from one to three months the star is culminating at midnight and in as many more we clock it in the evening twilight.

Evidently this sidereal day is not the sort for practical use. Since its beginning comes at all times of the day and night, its "noon" would do the same. By and large our active life is controlled by the sun. We rest during the night, arise more or less when the sun comes up, and retire again with the coming of darkness. In cities, while we do not live so strictly by the sun, our activities are still largely conditioned by the alternating light and darkness. Before the common use of lighting, as even today in rural communities, the rising of the sun was the beginning of an active day.

So the sun has been used as a timepiece from very early days. The shadow it creates became a clock hand moving over a dial. And thus came the sun-dial. The obelisks of Egypt were no doubt designed for casting shadows, and the Greeks had a similar device. By marking off radial lines about the base, hours and parts could be indicated. Sunrise marked the beginning and sunset the end of the measuring period. This was divided into 12 hours. Since in most parts of the earth the interval between sunrise and sunset is not the same throughout the year, these hours were not equal in length, and are therefore known as temporary hours. By slanting the shadow caster—generally called a gnomon—so that it is parallel to the earth's axis, the hours are made more nearly of equal length throughout the year. The shadow may be cast either on a vertical surface, as in a wall sun-dial, or on a horizontal surface, as in the pedestal dial frequently found on lawns and in gardens.

Just as in the case of star time, every sun-dial has its own meridian and tells only its own local time. A sun-dial is quite satisfactory for many purposes. It is convenient in that it requires no attention, inconvenient in that it will not operate at night nor when the sky is overcast.

If you adjusted your clock or chronometer to keep star time and compared it to sun time, you would discover some strange disagreements. The intervals of 24 hours measured by the stars are regular and of the same length, but those of the sun's crossing the meridian are not. From sun noon to the next sun noon is a variable interval.

There are two reasons for this irregularity. First, the earth is not going around the sun in a circle but in an ellipse, and in this elliptic path it does not maintain uniform speed. When the earth is near the sun, as it is about January 1, its speed is higher than in July when it is most distant. Second, the axis of rotation of the earth is not at right angles to its path of revolution about the sun. Therefore, the sun does not cross the sky on the same daily path. In the north temperate zone, during spring and summer, the sun rises north of east, crosses high in the sky, and sets north of west. Around Christmas it rises far to the south of the east, crosses the south point at noon at a low altitude, and sets to the south of west.

The use of sun-dials for timekeeping became out of date when mechanical timepieces came into use. A clock or watch is designed to run uniformly. The astronomer, therefore, has invented a sun that moves uniformly too. This *mean sun*—so called because it shows the average or mean solar motion—is the one your watch follows. Therefore, your watch keeps *mean time,* and may differ from sun-dial time by a quarter-hour or less.

This difference is called the *equation of time* and is frequently given in almanacs along with other astronomical data. On terrestrial globes it is often shown graphically in a figure 8 arrangement called an *analemma.* The word analemma, originally from the Greek, means support, but in Latin it was a particular type of sun-dial.

Even mean time is not suitable for our present daily use. It is still local time and if we used it without change, each community would have its own time. With railroads and airlines running over long distances and radio linking up all the quarters of the globe, endless confusion would result. When the transcontinental railroads went into operation the first real necessity for uniformity was felt, and *standard time* began in 1883.

By agreement, zones are established and all the communities in one zone use the mean time of a standard meridian. These are 15 degrees apart in longitude or one hour in time. In the eastern United States we all use the time of the 75th meridian, or time that is five hours earlier than London. To the west of this eastern standard time zone another belt uses central time. Mountain time and Pacific time zones complete the United States. But all over the civilized world similar zones give order and exactness to timekeeping.

Time, then, is not such a simple matter. There is star time or sidereal; sun time or local apparent; watch time or mean; and standard time. Regardless of which kind you select it still comes from the sky.

The creeping of the sun around the sky once a year gives rise to a way of measuring the year. When we started to describe star time we began by observing a certain star crossing the meridian in the dawn, and described how this observation would come earlier each night until the star was lost in the early evening sky. After many days, however, that star would again cross the meridian in the dawn. And that would measure a year—at least one kind of year, *sidereal.* Its length as given for 1940 in the *United States Nautical Almanac* is 365.25636046 mean solar days, and if measured in sidereal days, one day more.

This is not the ordinary year, or year of seasons, which is a little shorter, having only 365.24219633 days in it. That is called the *tropical year* and is measured by the sun's shadow. About June 21 the sun is farthest north of the equator and shines from the zenith at noon along the Tropic of Cancer. Anywhere in the Northern Hemisphere its shadow is then shortest for the year, and when it returns to that position again a tropical year has passed—the sun has returned to the same tropic again.

It would seem like quibbling to note the difference between these two kinds of years, which is about 0.01416413 solar days, but it is about 20 minutes and 24 seconds. The Greek astronomer, Hipparchus, noted this in 125 B.C. and could not account for it. For 18 centuries it could not be explained. Sir Isaac Newton discovered it to be due to a curious wobbling of the earth's axis which made the tropics, and the equinoxes as well, move forward a little to greet the coming sun—precession of the equinoxes.

The quarter-day by which each year exceeds an even 365 days has caused a great deal of trouble. No calendar can be made that has an exact number of days in it. There just are not 365 or 366 full days in a year, and there is nothing we can do about it short of altering the earth's motions.

Therefore, our calendars have to be conventionalized along with our clocks. Ordinarily, we have 365 days in the year, but that makes each year about five hours, 48 minutes, 46 seconds too short. This discrepancy has been known, too, for many centuries. The Julian calendar, adopted by a decree of Julius Caesar in 45 B.C., put in an extra day every four years to make up the difference, which was then supposed to be an even quarter-day. But the shortage in a tropical year is less than a quarter-day. Therefore, the Julian year is too long by 8/1,000 of a day—11½ minutes. In the course of 1,000 years the calendar was out by about eight days.

By 1582, the error was about 10 days and a correction was applied by Pope Gregory. Thus in the Gregorian calendar a leap year is omitted every century in the last year of the century, the one ending in "00" (not in "99"), but every 400 years this is put back as a leap year. Therefore 1600 and 2000 are leap years, but 1700, 1800, and 1900 are not.

The moon offers a fair measure of an intermediate unit of time—the month. The word was originally "moonth" or the period of the moon.

While this body is convenient as a timepiece it has its drawbacks. In the old days the lunar month was measured from "the first appearance of the new moon." When that thin crescent was first seen in the western sky after sunset the new month was ushered in with the blowing of trumpets. Between new moons 29 days, 12 hours and 44 minutes elapse, about 29½ days. Therefore, there is not an integral number of lunar months in a year. Twelve such months total about 354 days, which is taken as a year by people who use a lunar calendar, the Mohammedans, for instance.

A strictly lunar calendar gains about 11 days a year on the sun. That is, New Year's Day moves forward a month about every three years, and in 34 years it would go completely around the calendar. This can be adjusted by inserting an extra month in the calendar, at stated intervals. The Jewish religious calendar has an "embolismic" month in it about every three years. Our civic calendar is kept balanced by making the conventional month a little longer than the lunar month.

The week is purely arbitrary, although it does correspond roughly to one phase of the moon. It could be changed to five or 10 days without in any way disturbing the calendar. Our calendar months could be readjusted to better advantage, to keep the quarters of the year equal in length. The World Calendar Association is at present advocating such a readjustment.

LATIN-AMERICAN COMMITTEES

By Charles C. Sutter

GROWTH in the world movement for calendar reform is signalized in a recent decision taken by 15 national organizations comprising the Comite Latino-Americano del Calendario Mundial to continue their work as distinct and independent national committees representing the interest of their own countries and co-equal with other similar bodies throughout the world.

Organized in 1934 by Dr. Ismael Gajardo Reyes, this Latin-American Committee for The World Calendar became the center for coordinative activity of groups and committees in several Latin-American countries. With the passing years additional national organizations joined the Committee until, at the time of Dr. Gajardo Reyes' death, late last year, 15 calendar reform organizations existed in these countries.

The Latin-American Calendar Committee, it may be said, through newspapers, radio, and the spoken word educated the people of South and Central America to the benefits of The World Calendar. It achieved a solidarity of cooperation and approval for this much needed improvement among our good neighbors to the South.

Feeling that the purpose of a coordinating relationship has been accomplished, the national committees expressed their desire that each take its place in the world federation of calendar reform organizations. The World Calendar Association is grateful that they will continue to regard it as the world center for dissemination of material; a center with which all the various committees can continue to cooperate for the simplification of the present unsatisfactory calendar through the introduction of the new World Calendar.

The Chairman of each Latin-American committee has been invited to take his place on the Foreign Advisory Committee of The World Calendar Association, as representative of his country's interest in keeping the torch burning for The World Calendar—one of the constructive and progressive movements in our world today.

LET ALL THE SCHOOL BELLS RING AT ONCE!

By ANNETTE SMITH

Educational Adviser, Council Against Intolerance in America

THE rotating habits of the present-day calendar probably affect the educational world as much as they do any area in modern life. Because the school year sometimes starts during one week in September sometimes during another and therefore closes at different times; because December 25 occurs on a different day of the week each year; and because the length of the school year varies considerably in different states it takes an expert to devise a curriculum that "comes out even."

And that's only the beginning of the troubles caused by the shifting school calendar. Colleges have one time to start and one time to close; public schools have another; private schools have another; and now, since nursery schools have become an important part of American education, they are likely to have another. The National Education Association is besieged with requests every year from people seeking information on starting dates for schools throughout the country. If the calendar were stabilized, every town and city in the country could start on the same day instead of varying from one to three weeks throughout the United States.

But, you say, that could all be avoided by having the various kinds of educational institutions get together to determine the length of the school year, the time of holidays and so on. True they might do it one year, but the whole procedure would have to be repeated the next year because Labor Day falls in the second week instead of the first week in September, because Christmas comes on Saturday instead of Friday and because Easter has confused the issue completely. And as one who has worked on educational committees, I am sure that the whole process of agreeing on school dates would be too unwieldy to attempt more than once. If the calendar itself were uniform the process would be automatically decided.

Let's take a typical family. They're not imaginary. I happen to know them well. Henry Robinson, the father, is a university professor whose classes start at varying times during September and finish at varying times in June. (Of course that's not his real name.) Patricia, the youngest, goes to Nursery School which sometimes starts earlier, sometimes later than father's classes. Robert, an eight-year-old, goes to regular elementary school and his lessons seldom start at the same time as either Patricia's or his father's. Mary, the oldest, is a sophomore in college, but because she wanted to study journalism and her father is in a school of education she chose an out-of-town college that has still a different school year.

The Robinsons have a place in Connecticut during the summer, but the whole tribe has to trek back to the city for Robert's elementary school's start, while the rest of them hang around the city apartment during hot weeks in September until their respective educational institutions get under way. Such a situation does not make for tranquility in the home.

When the founders of Labor Day established this holiday, they did the best they could by making it always come on the first Monday in September. But since the days of schools' starting hinge so much on whether the first Monday is in the first week or in the second, Labor Day's shifting causes great confusion. Some Boards of Education feel that with one day gone there's no use starting until the second week. Others think that four days can be used advantageously to get school affairs organized so they get under way on the first Tuesday. This situation affects school terms throughout the year and all types of schools from nursery schools through the colleges. If the first day of September were standardized as is advocated by The World Calendar Association, Labor Day would automatically fall on the same day each year and schools could establish a starting day that would be the same whatever their grade level and in whatever state they operated. Thus not only would all the Robinsons—Father, Robert, Mary and Patricia—start to school at a regular date each year, but school-going members of all the families throughout the United States would be starting at a uniform time. If the calendar were stabilized, school openings, closings, holidays and examinations could become as stable as the fact that Christmas always comes on December 25.

The Robinsons and their like could all start off at once, could plan a year in advance or five years in advance if they wanted to take a vacation between semesters or during spring vacation and be sure that all the children and the head of the house would be free to vacation together. Mrs. Robinson could know from year to year during what week she should shop for the children's school clothes; the stores from which she buys could predict far enough in advance so that orders could be placed and thus save money for all concerned; and the schools could depend upon a full enrollment when the bell rings after vacation.

Which brings up another point. Because Dr. Robinson's university does not start until late in September and because the country is lovely in September, it is a temptation to postpone the younger children's entry into school. Truth to tell the Robinsons have succumbed more than once with the result that the children are late getting started, have to make their adjustments when the other children are all set to settle down to work, and they pay for a situation which a permanent calendar could easily avoid.

Let's go back to that idea of shopping. Stores go to considerable trouble to obtain the school calendar of all schools in the community. Since schools do not make up calendars until late in the previous school year,

stores frequently do not know until some time in June at what time the majority of schools are going to start in the fall. So sales for school clothes and material are hard to schedule. If schools started at a uniform time every year as they would in the proposed new calendar, the department store could place orders far ahead for advantageous sales the week before school starts in September. The buyers would know from year to year during what week to stage their school sales instead of jumping about throughout all of September's four as they are now required to do. Mrs. Robinson could know that The College Shop opens to outfit her college sophomore during the same week that the store has a fresh selection from which to outfit the nursery scholar with corduroy pants and abbreviated ginghams and the older boy with whatever an eight-year-old demands.

One could go on and on listing the inconveniences to families with children in school under the present calendar set-up; the difficulties in making a curriculum with school dates so elastic, the complications of bookkeeping when pay-days come at varying intervals, the difficulty in school purchases and the effect on many other activities and services—but that's another story. I've tried to tell what benefits the new World Calendar will bring—the disadvantages of the present one are obvious.

DR. GUSTAVUS AUGUSTUS EISEN

By CHARLES C. SUTTER

Director, The World Calendar Association

DR. GUSTAVUS AUGUSTUS EISEN, archaeologist, biologist, and writer, died in New York on October 29. In spite of his 93 years, Dr. Eisen maintained a constant interest in the calendar, its history and reform.

A member of The World Calendar Association for more than four years, he contributed an interesting study of the Mayan calendar to the *Journal of Calendar Reform* in 1938. It appeared under the title, "Wheels Within Wheels." In describing this ancient method of reckoning time, Dr. Eisen said: "The Mayan calendar was literally a case of wheels within wheels—a mathematical clockwork that ticked off the days, years, and centuries. It was an incredibly intricate system, but it worked with absolute accuracy. The people who devised it had a passion for numbers, and the calendar was their great masterpiece. As a piece of astronomical calculation it is utterly without equal."

Born in Stockholm, Sweden, on August 2, 1847, Dr. Eisen received his education abroad. In 1873 he received a Ph.D. degree from the University of Upsala, Sweden, and had a remarkable career in archaeological research, travel, and authorship. Dr. Eisen's researches concerning the Chalice of Antioch, reputedly the Holy Grail, or cup of Christ's Last Supper, made him famous. He was the originator of the Sequoia National Park, made many archaeological explorations to Mexico and Central America, and continued his archaeological explorations in connection with antique glass and Christian Archaeology in Spain, Italy, Algiers, Tunis, Morocco, and Egypt.

He was the author of more than 100 books and papers, including such diversified monographs as *Mesopotamian Cylinder-Seals* and *The Legends of the Holy Grail*, and his earlier writings included *Portraits of Washington, Glass-Antique Glass—Its History and Classification, The Fig*, and *The Raisin Industry*.

Dr. Eisen was a member of many learned societies in America and Europe.

PROBLEMS OF THE CALENDAR

By Professor W. L. Kennon

University of Mississippi

In general, problems of the calendar fall into two distinct classes. First, those arising out of the attempt to use two, or more, incommensurate astronomical, or natural, units of time. Second, those due to the use of arbitrary sub-divisions of the natural units.

THE PROBLEM OF COMMENSURABILITY

The three natural units, or intervals, that have been used most extensively for the purpose of constructing calendars are the tropical year, the lunar month, and the solar day. If only one of these natural periods* of time is incorporated in the calendar, the problem of commensurability disappears; for any arbitrary multiple or sub-multiple of the natural period chosen might be adopted for the purpose of expressing longer or shorter intervals. For example let us suppose that we adopt the solar day (in practice the mean** solar day); then longer intervals could be expressed in terms of multiples of this unit without reference to the year; or to any other natural interval, such as the lunar month. The interval say, of 1,000 days, might then be employed for longer periods and given a name such as the kiloday. Obviously such an arrangement would be highly objectionable since it would completely ignore the seasons.

On the other hand, if we adopt the tropical year as the basis and divide it into some integral number of arbitrary sub-divisions, we could, of course, likewise avoid the problem of incommensurability, but we would be forced to ignore the day as an element of the calendar. This would be even more objectionable than having to ignore the year; for verily we live day by day. Thus no calendar could meet our requirements that did not include as essential elements the solar day and the tropical year.

It is, then, very unfortunate for purposes of calendar building that the tropical year and the mean solar day are incommensurate; that is to say, that there is no integral number of mean solar days in a tropical year. Measured in terms of (mean) solar days the length of the tropical year is very approximately 365.2422 days (365 days 5 hours 48 minutes 46.15 seconds).

Obviously, a practical calendar that employs these two incommensurate

* For the present purpose it is not necessary that we raise the question of the variability of the lengths of these natural intervals. This feature is of some importance, however, and will be considered at the proper place.

** The mean solar day is the average of the true solar days (which vary in length) throughout the year. There are, therefore, exactly the same number of mean (or average) solar days in a year as true solar days.

natural units can only be perpetuated by "patching it up" from time to time, by the addition or deletion of one or the other of the units employed. This procedure is called *intercalation.* Essentially, the expedient of intercalation in practice amounts, first, to substituting for one of the natural units or intervals an arbitrary interval so chosen as to be approximately equal to one of the natural intervals, and so as to be commensurate with the other; and second, to compensating for the accumulated difference between the length of the natural interval (which serves as the natural basis), and the approximately equivalent arbitrary interval (which serves as the practical basis) by the addition, or deletion, of one of the units when the "accumulated difference" becomes nearly equal to one of these units. An illustration will help to clarify this procedure.

The Julian calendar substitutes an arbitrary, or "Julian year" of exactly 365.25 mean solar days, for the natural, or tropical, year of 365.2422 days. The Julian calendar year thus comprises exactly 365¼ mean solar days. It is, therefore, 11 minutes and 14 seconds longer than the tropical year. The Julian calendar made no provision to compensate for this excess, which amounts to about one day in about 128 years. The Julian calendar was inaugurated in 45 B. C., and, if no adjustments or revisions had been made in the meantime, the date (or day of the year) would now (1940) be displaced with respect to the date on which a given season (say the Vernal Equinox) occurred when the calendar was first instituted, by a period of 13 days. However, even by the end of the 16th Century this feature of the Julian calendar had become quite objectionable. For example, the Council of Nicaea in 325 A. D. "fixed" the date of Easter as the first Sunday following the full moon which occurs on, or immediately after, March 21, which was the date of the Vernal Equinox of that year. By the end of the 16th Century the equinox had regressed in the calendar until it was occurring around March 11. The ecclesiastical importance of the date of Easter, as well as of the dates of other church festivals was such that this seasonal displacement became a matter of consequence. Accordingly, in the year 1582 Pope Gregory XIII, with the advice of the astronomer Clavius, proposed a revision, or adjustment, of the Julian calendar with a view to restoring the original date of the Vernal Equinox, and to providing against a future repetition of its seasonal displacement. The original date of the equinox was restored by suppressing 10 days from the calendar. This was put into effect by proclaiming that October 5 of the year 1582 should be designated October 15 of the same year. Having restored the date of the equinox, it was next required to provide against the recurrence of such an embarrassing contingency.

This historic instance of calendar revision is introduced here not only for the purpose of illustrating the problem of incommensurability, but also to call attention to the really serious aspects of calendar defects and reforms from the point of view of human society. The calendar may be an interesting puzzle to the astronomer and mathematician; but we must not overlook the fact that it also has chronological, ecclesiastical, legal, and commercial aspects that are of far more concern to human society than is a mathematical puzzle. Indicative of the first aspect mentioned, it is said that a great Assyriologist, who had devoted many years of study to ancient dialects in preparation for his work, once remarked that it would have facilitated his researches much more had he spent this time studying ancient calendars.

Before entering upon that aspect of calendar revision which proposed to provide against the displacement of the seasons with respect to the calendar, we must first call attention to the device of the Julian calendar for taking care of the circumstance that the number of solar days in a Julian year, though commensurate, is not an integral number. This was cared for by the so-called leap-year rule. The first calendar year was concluded and a second year begun with the completion of the 365th day. Thus the sec-

ond calendar year was begun one-quarter day before the calendar year was completed. If this had not been done, the time of the beginning of the day would have been advanced six hours in the day in each successive year. For example, if instead of concluding the year say at midnight of the 365th day, the calendar year had been allowed to run to its full fruition of 365¼ days, then the first day of the following year would necessarily have begun at 6 A. M. instead of at midnight as in the previous year. The days of the third consecutive year would begin at 12 o'clock noon, et cetera. To avoid this confusion and inconvenience the "leap year" was included as an integral part of the Julian calendar. That is to say, the first three years of each four-year series (the so-called Julian cycle) carried 365 days each, and to the fourth year of the series was added an extra day, making the "leap year" of 366 days. This day was attached to the month of February, giving it 29 days in the leap year instead of the usual 28 days of ordinary years. This device, it will be noticed, does not affect the average length (365¼ days) of the Julian year over the four-year cycle. It does, however, upset the symmetry of the calendar year, and introduces other objectionable features to an ideal calendar; but more of this later.

Let us now return to the matter of revising the Julian calendar so that the calendar year may more nearly equal in length the tropical year, which fundamentally is the basis of the Julian calendar. As noted above, the excess of the Julian over the tropical year is 11 minutes 14 seconds, and amounts to one day in very nearly 128 years, or to about three days in 384 years. To compensate for this excess the Gregorian calendar omits three leap days in 400 years. This was done by providing that century years (which according to the Julian calendar are leap years) shall not be leap years unless their numbers are divisible by 400, in which case they remain as leap years. Thus, the Gregorian calendar omits three leap days in each 400 years from the Julian calendar, rather than three leap days in 384 years (about). These three "leap days" were omitted from the century years whose numbers are not divisible, without remainder, by 400. According to the Gregorian calendar, therefore, the century years 1700, 1800, and 1900 were common years; whereas, the century year 2000 will be a leap year. This rule reduces to 25.92 seconds per year the average difference between the length of the tropical year and the average length of the Gregorian calendar over a period of four centuries. At this rate it will require some 3,300 years for the calendar date to become displaced one day with respect to the equinoxes; or in other words, with respect to the seasons. The Russians continued to use the Julian calendar until 1918 at which time they adopted the so-called Eastern calendar according to which "century years shall be leap years only in case their numbers when divided by nine give a remainder of two or six." This rule reduces the average difference between the calendar year, and the tropical year to three seconds, and will, therefore, require an interval of about 29,000 years for a difference of one day to accumulate between the calendar and the seasons. The statement of the rule may be a little difficult to remember, but fortunately it does not need to be applied often. The Gregorian and Eastern calendars now agree in date, but will differ by one day after 2800 A. D.

Professor T. A. Bickerstaff, of the University of Mississippi, a student of the calendar, suggested the rule that every year divisible by four be a leap year excepting years divisible by $2^7 = (128)$. This reduces the difference between the calendar year and the tropical year to less than one second and would require about 90,000 years for one day to accumulate!* Besides the rule's precision and simplicity it is enhanced by the manner in which it employs the venerable calendrical numeral of seven.

So far then as the problem of commensurability between the mean

* If this rule were put into effect on a year divisible by 128, such as 1920, 2048, etc., the present succession of leap years would not be disturbed until the year 2000, which year would be a leap year according to the Gregorian calendar but would not become a leap year under the new rule.

solar day and the tropical year is concerned there appears to be little more that can be done, or at least that needs to be done.

THE PROBLEM OF ARBITRARY SUB-DIVISIONS OF THE CALENDAR

For many purposes the mean solar day is too short a time interval and the tropical year is too long. The need of calendar divisions of intermediate lengths has been felt from the earliest times. The week of seven days even antedates any established calendar. The seven-day week is, indeed, one of the oldest and most firmly established institutions of human society. The seven-day week for all its hoary age and persistence was not, however, universally used by ancient peoples. Alexander Philip in his scholarly little book *The Calendar* refers to the seven-day week as follows: "The seven-day week is of Semitic origin. Traces of it are to be found among Chaldean, Egyptian, and even Greek records. But it was among the Jews that the seven-day week was fully developed, and it is from them that its observance has spread over, and now so largely dominates the civilized world."*

The question of the origin and history of the seven-day week is most interesting, though our necessary limitations of space do not permit its discussion here. Seven was held in high esteem as the "perfect number" by ancient philosophers and mystics; the seven days of creation of *Genesis;* the seven wanderers of the sky, or "planets," as known to the ancients (the Sun, the Moon, Mercury, Venus, Mars, Jupiter, and Saturn); the seven wise men of Greece; the two seven wonders of the world; the seven seas; the seven ages of man (Shakespeare); et cetera, all witness to early and persistent use of this "perfect" number. There is, however, no exact astronomical basis for the seven-day week any more than there is, say, for a ten-day week. A seven-day period is only roughly a fourth of the lunar month (29½ days). A ten-day period is, for instance, much more nearly a third of the lunar month.

The immediate point at issue, however, is that the seven-day week is not an integral factor of the calendar year. There are 52 seven-day ($52 \times 7 = 364$) weeks plus one day in ordinary years, and 52 weeks plus two days in leap years. Thus the annual form of the Gregorian calendar only repeats itself, cyclically, after 28 years, in the sense that the same day of the year falls on the same day of the week. This illustrates a difficulty of calendar construction inherent in the selection of arbitrary sub-divisions. It must not be overlooked, however, in this connection that any arbitrary choice of sub-divisions of the year is complicated by the necessity that sub-multiples of the year must likewise be multiples of the day.** This is just another of the insidious difficulties in the use of two incommensurate natural units (the day and the year) in the calendar.

Another arbitrary number that appeared early in calendar notation, and which is now well-nigh universal, is the number 12. Much might be said*** of the useful properties and distinguished history of this "noble" number; but here again necessary limitations forbid. Twelve may be divided integrally into halves, thirds, quarters, sixths; it contains two pairs of integral factors 3 x 4 and 2 x 6. The sheer usefulness of this facile number, according to Mr. H. G. Wells,**** commended it to the culture even of Neolithic

* *The Calendar,* by Alexander Philip, p. 29. Cambridge University Press.

** The month of the Gregorian calendar, of which there are 12 contained in the year, cannot be one-twelfth of a year because of the requirement that the month be a multiple of the day. Furthermore, a month of this character could not be a multiple of the seven-day week.

*** See *The Romance of the Calendar,* Chap. 7, by P. W. Wilson, W. W. Norton and Co., Inc., New York, 1937.

**** See *Outline of History,* by H. G. Wells.

man. With the dozen of 12 units, the foot of 12 inches, the day of twice 12 hours; what could be more appropriate and convenient than the year of 12 months? But when we note that, although the year contains exactly 12 months, the month is, nevertheless, not one-twelfth of the year, we begin to realize the true obstinacy of calendar arithmetic, and begin to forego hope of a perfect solution of this stubborn problem.

Again, too, we are confronted by the lack of integral commensurability of the two sub-divisions, the week and the month; not to mention the inequalities of the several months. There are 12 inches in every foot, and three feet in every British yard. There are twice 12 hours in every mean solar day, and each hour is equal to every other. But among the sub-divisions of the year which we have to divide and multiply, add and subtract, quite as often as we do the divisions of the yard and of the day, no such order and simplicity prevail; nor can any such order and simplicity ever prevail in any calendar that is based upon both the daily and the annual motions of the sun, as must depend any natural calendar that is to meet the requirements of human society. Even in this extremity there is a theoretical possibility that should not be overlooked in a discussion of this sort. Just as we have an arbitrary week that is an exact multiple of the day without reference to the month, so we might have a month that is an exact sub-multiple of the year (say one-twelfth of a year) without reference to the day. This is in principle, but not in practice, what we have in our modern calendars. As everyone knows we have 12 months in the year, but if we correlate the month integrally with the day, then the month cannot be one-twelfth of a year. But if we were to forego this correlation, of course, there is no reason why we could not divide the year into 12 equal months. In practice this would be equivalent not only to setting up two distinct calendars but would also require in practice a separate time service for each. For instance, we would require a clock with a "short-hand" that would make one revolution, say, in a tropical year; and a "long-hand" that would make one revolution in a month of one-twelfth this length, or make exactly 12 revolutions in a year. Such a clock would indicate at any time the progress of the year in months and fractions of a month, but would not indicate directly, or in any simple integers, the progress of the year in weeks or days. Such a procedure, while it would provide an exact 12-fold division of the year and solve the difficulty of a 12-month year, would do so only by ignoring the day and the week as sub-divisions of the year; which again illustrates the statement we made at the outset that the difficulties of providing arbitrary sub-divisions of the calendar resided in fact in the use of two natural units, and that these difficulties would disappear only when we confined the calendar to one such natural unit. However, even the numerical simplicity of such an expedient has little weight in the face of the reality that we live not only by the day, but as truly by the year as well. Once being reconciled to this reality, we can turn our attention more complacently to another, namely, that of making the best bargain we can with the arithmetic of a double standard calendar.

Having outlined the problems that are to be encountered in calendar construction, let us now examine the present form of the Gregorian calendar in the light of the principles that have been set forth with a view to evaluating the bargain that has been struck. First, we note that the present calendar is not "perpetual" in the sense that it preserves the same form from year to year. This feature of our calendar is too unpleasantly familiar to require comment. Indeed, the same day of the week does not fall cyclically on the same day of the month, but once in 28 years, thus necessitating the preparation of a "new" calendar each year. This comes about because of the integral incommensurability of the week with the year, and with the month. There are 52 weeks plus one day in ordinary years, and 52 weeks plus two days in leap years. Thus the day of the week is advanced one day in the month each successive (ordinary) year, and is advanced two days in leap years. If there were no leap years the present calendar would repeat itself after seven years, but the intervening leap year upsets this cycle and postpones the recurrence for a period of $4 \times 7 = 28$ years. This period is known as The Solar Cycle.*

* There are thus seven ordinary year calendars, and likewise seven leap-year calendars. That is, there are seven calendars of 365 days, one beginning with each day of the week; and

Several of the current proposals for the revision of the calendar undertake to cure this difficulty by omitting the extra day (or two days, as the case may be) from the tabulated form of the calendar, designating these days by some special notation, as for instance December Y (Year-End Day), and June L (Leap-Year Day) in the case of "The World Calendar." The 13-month calendar meets the situation in a similar manner. By this device the calendar may be made "perpetual" in the sense that the same tabulation may be used for successive years. According to this arrangement the same day of the week would fall on the same day of the month in successive years, but would not necessarily do so in successive months of the same year. This, of course, could not be the case if we adhere to the 12-month year. It would be possible with the adoption of 13 months of 28 days each (13 x 28 = 364 days) as proposed in the 13-month calendar. The same result could be accomplished by dividing the year into four divisions (or quarters) of 13 weeks each, and in other ways. However, we are considering here only the question of a "perpetual" form of calendar.

SYMMETRY OF THE CALENDAR

If we attempt to divide the year of the present calendar into quarters of three months each we find that the first quarter (January, February, March) contains 90 days,* the second quarter (April, May, June), 91 days; the third quarter (July, August, September), 92 days; the fourth quarter (October, November, December), 92 days. If we attempt to divide the year into thirds of four months each, we have the periods 120 days, 123 days, 122 days. If we divide the year into halves of six months each, we have 181 days and 184 days.

Thus the calendar, although based in principle upon a 12-fold division is, nevertheless, not symmetrical with respect to any of the multiples of 12. Once the 365th, or odd day, is eliminated in the tabulation, as has been suggested in order to render the calendar perpetual, the symmetry of the calendar can easily be accomplished by merely rearranging the numbers of days in the 12 months. This is done in The World Calendar and in the 13-month calendar. The former adheres to the 12-month division, each quarter of which contains 91 days; and, of course, the two halves of the year equal 182 days each. The calendar based upon 13 months is not divisible into quarters and halves in

seven calendars of 366 days, one beginning with each day of the week; making a total of 14 calendar arrangements. Ordinary year calendars repeat themselves in yearly cycles of 6, 11, 11, 6, 11, 11, 6, 11, 11, 6, etc.; whereas leap-year calendars repeat themselves in cycles of 28 years. Since one of the ordinary year cycles (6, 11, 11) = 28 years, it follows that the 28-year Solar Cycle includes all of the 14 possible forms of the Julian calendar. Because 100 is not divisible by 28 without a remainder, and because century years are not leap years except every fourth century, it follows that the same succession of calendars cannot be correlated with the same years of the century within a shorter period than 2,800 years, which is the least common multiple of 28, 100, and 400 years. June 20, 1940, occurred on a Thursday. June 20 will not again occur on Thursday on the fortieth year of the century until the year 4740, or not until after 28 centuries, Gregorian calendar. For the further correlation of the years of the Julian and of the Gregorian calendars with this sequence the reader is referred to *The Perfect Calendar*, by Henry Fitch (Revised Edition), Funk and Wagnalls Company, New York.

* 91 days for leap years.

terms of months, but instead gains a perfect symmetry for the month measured in weeks and days, each day of every month falling on the same day of the week. Also the year and the month are perfectly symmetrical with respect to the week.

Here, then, as in all other problems relating to the numerical arrangement of the calendar, it is largely a matter of compromise, and in the final analysis, a choice between several arrangements; a choice that will depend upon which alternative offers the most in meeting the many requirements of a practical calendar.

EPOCH, OR THE WHEN?

Time-keeping systems are required to answer two distinct questions, namely, "How long?" and "When?" The first of these calls for an interval, such as a day, a week, a year, et cetera; the second, for an epoch such as 12 o'clock noon January 1, 1938.

In our discussion thus far we have emphasized the "interval" in calendar construction. Now we shall consider briefly the epoch. There must be some agreement as to when and where the day and the year shall begin. This question is usually considered under the discussion of the Civil Time System, but the fact that the question arises here merely emphasizes the integral connection between time-keeping and the calendar. Obviously, the day might be regarded as beginning at any point in the course of the diurnal rotation of the mean sun. It is agreed, however, that the day at any place shall begin the instant that the mean sun crosses the local anti-meridian of the place, *i.e.*, at local midnight. A given date, however, first appears on the earth at the instant of midnight on the 180th meridian, or, what is equivalent, at Greenwich noon. This, of course, according to current and proposed calendars determines in general when the year shall begin, *i.e.*, at Greenwich noon. But what Greenwich noon? Obviously, the year might be begun on any Greenwich noon, as for instance, on the noon nearest the Spring Equinox, or the noon nearest the Summer Solstice, or at any other Greenwich noon. Another basis would be to begin the year at the Greenwich noon occurring nearest the instant that the earth passes the perihelion, or aphelion, of its orbit, et cetera. In the Julian calendar, for instance, the year was begun originally about a week after the Winter Solstice, which corresponds approximately with the perihelion passage. This was arbitrary on the part of the inaugurators of this calendar. It would have seemed more logical to have correlated the epoch of the year more exactly with the astronomical seasons, as was done in the Jewish calendar, which began the year with the Autumnal Equinox.

CHRONOLOGICAL ERAS

The serial number of a year determines the era of the calendar. It signifies the time, or epoch, when the enumeration, or count, was begun.

For example, the current year is the 1,940th year of the Christian Era; the 2,693d year of the Roman Era, the 2,600th year of the Japanese Era. The 1,359th year of the Hegira, or Mohammedan Era, began at sunset on February 9, 1940. The 5,701st year of the Jewish Era began at sunset on October 2, 1940, et cetera. These numbers imply a point of beginning from which chronological time is counted. This point of beginning may be any unique event or occurrence, whether real or fictitious. It may be some chance event of human history; or some naturally ordered event, such as an eclipse of the sun, or some conjunction of the planets, et cetera. The eras just mentioned take their origin from historic or legendary occurrences. The Jewish Era counts from the supposed date of creation; the Mohammedan Era, from the flight of the prophet; the Roman Era, from the founding of Rome; the Christian Era, from the birth of Christ,

et cetera. Eras, since they are based upon unique events, are distinguished from cycles in that eras are non-recurring. A series of cycles, however, might be made the basis of an era. An interesting example of this is the so-called Julian Day Number.

THE JULIAN DAY NUMBER

Joseph Scaliger was responsible for the introduction of the plan of numbering the days consecutively without reference to calendar notation. Thus the Julian Day Number corresponding to January 1, 1940, was 2,429,630. So we may accordingly ask, 2,429,630 days since when?

In the year 1582 Scaliger announced a comprehensive cycle known as the Julian Period which is a common multiple of the 19-year Metonic Cycle; the 28-year Solar Cycle; and the 15-year Roman Indiction. He found that these three latter cycles when carried back had a common beginning in the year 4713 B. C. (Julian calendar). He thus fixed the date January 1, 4713 B. C. as the beginning of his period which will not be completed until the year 3267 A. D. We may thus consider the Julian Day Number as the specification of a date in an era which began January 1, 4713 B. C., the beginning of which is established by a natural order.

Even though we may achieve perpetuity and numerical symmetry of the calendar by the use of arbitrary expedients we must not overlook the fact that the tropical year is itself inherently unsymmetrical. The four astronomical seasons even are not of equal duration. The spring season (from the Vernal Equinox to the Summer Solstice) is 92 days, 19 hours, 14 minutes in length. The summer season (from the Summer Solstice to the Autumnal Equinox) is 93 days, 15 hours, one minute. The autumn season (from Autumnal Equinox to Winter Solstice) is 89 days, 19 hours, 12 minutes; and the winter season (from Winter Solstice to Vernal Equinox) is 89 days and 21 minutes. The half of the year from the Spring Equinox to the Fall Equinox is, therefore, seven days, 14 hours, and 42 minutes longer than the half of the year from the Fall Equinox to the Spring Equinox. This is of little consequence, however, from the viewpoint of the civil calendar; and fortunately the astronomer is prepared to take care of his peculiar requirements in matters of this sort.

CHRONOLOGY AND THE CALENDAR

In dealing with periods longer than the year, and particularly when many centuries are involved, it is somewhat difficult to determine the interval between two widely separated dates in the present, or in proposed calendars, because of the necessity of keeping track of intercalated, or untabulated days. For this purpose various cycles have been devised.

A cycle is the least common multiple (approximately) of two, or more, incommensurate units of a calendar. For example, the Solar Cycle, of 28 years, determines the recurrence of the same day of the month on the same day of the week. Thus in the year 1938 the seventh day of October fell on Friday. The seventh day of October will again fall on Friday in (1938 + 28) 1966, in (1966 + 28) 1994, et cetera. In other words the same day of the week and month recurs every 10,227 days (unless a century year, divisible by 400, intervenes). The chronological aspect of the calendar is of little consequence in civil life, and specialists in this field have their own techniques for handling the problems that sometimes arise. The Julian Day Number affords a very convenient way of specifying an epoch especially for astronomical purposes. If the Julian Day Numbers of any two epochs are given, in order to find the intervening interval in

mean solar days it is merely necessary to subtract one of these numbers from the other.

If there were any real need for longer intervals than those already mentioned, other cycles might readily be obtained from the various astronomical periods. For instance, the period of the precession of the equinoxes, 25,800 years, might be mentioned. The geologist is, of course, confronted with time intervals of still greater orders of magnitude. The examination of the geologic time scale, in the light of what has been said, has many interesting aspects; but this lies beyond the scope of our proposed discussion. With the ever-expanding domain of the observable universe we may in the none too distant future be confronted even with the need of a Cosmic Chronology.

CRITERIA AND CONCLUSIONS

In concluding the first part of this discussion dealing with the problems arising out of the incommensurability of the solar day and the tropical year, we had occasion to remark that there appeared to be little, if anything, more that really needed to be done to bring the current calendar into harmonious agreement with the natural cycles on which it is founded; that is, with the solar day, the tropical year, and the seasons. Regarding the second part of the discussion dealing with the problems arising out of the arbitrary choice and arrangement of the multiples and sub-multiples of these basic units, it is quite apparent that the calendar presents no such happy status. We must not on this account, however, jump to the conclusion that even in this latter category the current calendar is *all* wrong.

Primarily the calendar is a document to live by, and secondarily, a system of bookkeeping; though we will all agree, other things being equal, that the simpler the bookkeeping the more it will contribute to the pleasure of living. Keeping these two aspects in mind, and giving due weight to each, let us examine the current calendar with a view to cleaving to that which is good and to making the most sensible bargain with that which is bad. We think this procedure, in the light of what has been said, will lead in the first place to very definite and convincing decisions, and in the second place show that the task of arranging a satisfactory calendar with all of its inherent difficulties is in fact a very simple and obvious matter. This is because the major difficulties of the problem have long ago been solved and there only remain a few adjustments.

As to the desirability of the seven-day week and the 12-month year, there can be no dispute. These, as has been pointed out, are among the oldest and best established institutions of human society. If a satisfactory calendar is one that shall harmoniously correlate the affairs of man with the cycles of nature, what better criterion of merit can be found than a record of successful accomplishment covering the entire span of man's recorded history? The very fact indeed that the world's greatest literature, "the noblest record of its achievement," (to borrow a phrase from the great Laplace), is itself a convincing argument for not upsetting the noble order of the past as expressed in seven and 12-fold divisions. We must, therefore, retain the seven-day week, and the 12-month year. What next? Hath the poet Dryden not written:

> "Perceiv'st thou not the process of the year,
> How the four seasons in four forms appear
> Resembling human life in ev'ry shape they wear?"

And perceiving the four seasons as they are ordained in the heavens and upon the earth, shall we not give them their rightful symmetry in the calendar? This means that the four seasons must be identified not only with the four quarters of the year but also with the months, for each month has come to have an individuality in relation

to the seasons as distinct as the individualities of the days of the week. This sentiment is feelingly expressed in the opening verses of Chaucer's "Prologue":

"Whan that Aprille with his shoures sōte
The droughte of Marche häth perced to the rōte,
And bathed every veyne in swich licour,
Of which vertu engendred is the flour;"

It would be about as sensible or rather as non-sensible to upset this established simplicity of the 12-month, four-season correlation which includes the seven-day week as to attempt to introduce another month or to subtract a month. These simple adjustments are admirably provided for in The World Calendar. Three days are shifted with respect to the months and one day is presented as a world-holiday, tabulated as an extra day, and the trick is done. The ancient order is preserved, a symmetrical arrangement of days, weeks, and months with respect to quarters and to the whole year is secured. The calendar becomes simple in structure, permanent in form.

"But," you ask, "what about the extra tabulated days?" Just this, they are the gift The World Calendar offers man by which the tremendous advantage of stabilizing the future order is achieved without relinquishing the proven groundwork of the past. The situation is somewhat like that of the weather; we talk a lot about it, but we are helpless to do anything about it. Thus so long as 365 is not divisible by either seven or 12 without a remainder, we have our choice of accepting an extra tabulated "gift-day" or a non-repeating calendar. Once we become reconciled to the idea of Year-End Day and accustomed to the practice, the novelty of this device will soon become commonplace. The year will still contain 365 or 366 days, as the case may be, and the same rules will still apply in determining their sequence. In The World Calendar it would seem to the writer that logic and good sense have spoken. One thing only remains to place the calendar abreast the advancing front of civilization, and this alone is the real problem of the calendar. It is agreement.

RÉSUMÉ

In this space we have attempted to make it clear that the problem of time-keeping, and of time bookkeeping, is fundamentally one of correlating human history and the occurrences of Nature with the movements of the heavenly bodies. We are not, however, overlooking the future possibility of using physical, chemical, or even biological* processes for this purpose. We are, however, attempting to emphasize the important role that has been played in the past, and that is being played at present, by astronomical science in meeting these fundamental requirements of human society, as regards an adequate time-system and calendar.

* The writer is not advocating a biological calendar, nor is he taking an opportunity to exploit a hobby; yet for the benefit of those who may regard such a possibility as entirely ridiculous, he would mention the periodic migrations of the swallows of the old San Juan —Capistrano Mission of Southern California. Annually for 68 years these birds have departed the Mission about noon of October 23 to return just as meticulously on the 19th of March following. This is, of course, not an isolated instance of periodic migration. It has been suggested, were the older birds destroyed prior to the established date of migration, that the fledglings would just as surely depart on schedule. This "faith" is founded on an inherited instinct, an ancestral trait, established by a law of nature perhaps no less mutable than the law of gravitation.

A NEW GERMAN CONTRIBUTION

Reviewed by the Reverend Edward S. Schwegler, D.D.

IMMERWAEHRENDER NEUKALENDER, *von J. B. Achatz*
Neka Verlag, Straubing, 1939

SOME time ago the *Journal of Calendar Reform** carried a review of another book by this same author: *Allgemeiner Neukalender* (Straubing, 1937). Herr Achatz is evidently a Catholic, since the present work, like its predecessor, bears the *Imprimatur* of the Vicar General of Regensburg, or Ratisbon. Further, an insert in this work reproduces a letter dated August 5, 1937, from the Papal Secretary of State, now the reigning pope, Pius XII. The letter acknowledges the receipt of the writer's previous publication, and grants the apostolic benediction to the writer himself. Such an acknowledgment, of course, can hardly be taken as an official approbation of the ideas set forth by the author. How many books are sent to the Holy Father in the course of a year, and how many of them he is able to read and give his direct and personal approbation to, may well be a matter of conjecture.

The present work is rather unique. The 12 initial pages contain a "perpetual calendar"—a page for each month. Each page has 11 columns, which give successively the following data: 1. Position of the Day in the Year; 2. Lunar Day; 3. Epact; 4. Roman Date; 5. Julian Date; 6. Gregorian Date; 7. Reformed Date; 8. Dominical Letter; 9. Position of the Sunday in the Year; 10, 11. Sundays and Feasts of the Church Year.

With each of these headings as a starting point, the author gives in succinct form all the essential information that the student of the calendar should possess. He also presents a number of formulae and tables.

The reformed calendar which Herr Achatz proposes has already been referred to in these pages as a sort of World Calendar without supplementary days. The first three quarters of the year would have 31, 30, 30 days, and the last 31, 30, 31, except that in leap year the second quarter would also have 31, 30, 31 days. This would give a pattern for the quarters of 91, 91, 91, 92 days in ordinary years, and 91, 92, 91, 92 days in leap years: a really quite symmetrical arrangement. But fixed dates would still wander through the week, so that the great goal of real and absolute fixity would still be far in the distance. As before, Herr Achatz distinguishes between two kinds of "movabilities" in the calendar. The first, or "normal" one, is confined to seven days, and is the kind possessed by all feasts with a fixed date, or with a certain day in a fixed week. The second, "abnormal movability," has a possible variation of 35 days, and is based upon the changing date of Easter.

It would be the aim of the author to remove the "abnormal movability" of feasts from the calendar and to substitute or retain only the "normal movability." He delineated his plan in his previous work, but in the newer book he makes some observations that are interesting. Logically, he maintains, all feasts of the year should shift only within the limits of the week because the year as a whole, beginning with the first Sunday of Advent, does not shift outside these limits. Then, the great feasts of Our Lord should parallel the first Sunday of Advent and so should be placed on Sunday, except where very definite reasons require another day (e. g., Ascension *Thursday*).

* Vol. VIII, pp. 162 *sqq.*

We then should have Christmas coming on the Sunday after the fourth Sunday of Advent, or on the last Sunday of December, the Circumcision on the first Sunday of January, the Epiphany on the second Sunday, and the Purification (February 2) on the fortieth day after Christmas. Easter in like fashion would be on a definite Sunday—the fifteenth after Christmas, or (the same thing) the fifteenth Sunday of the year. It could then only vary from April 8 to April 14. Similarly, Pentecost, Trinity and the other Sundays changing with Easter would move only within the limits of seven days.

Now let us see what The World Calendar would do along the same lines. Christmas in the latter, instead of always falling on Sunday, would fall on Monday, thus producing the double civil holiday which has so many advantages, and making the first of them a preparation for the second. Further, Christmas would always be December 25, and not vary from December 25 to 31. New Year's, or the Circumcision, would similarly be preceded by a holiday (Year-End Day) and would always be on January 1, first day of the year, Sunday, instead of varying from January 1 to 7.

Easter, besides always coming on the fifteenth Sunday of the year, would always be April 8, instead of changing from April 8 to 14. The same would be true of all feasts and Sundays dependent on Easter; besides being definite Sundays or weekdays of the year, they would always come on the same dates. The question then arises: why introduce all the novelties Herr Achatz suggests (and most prominent of these would be the varying dates of Christmas, the Circumcision and the Epiphany), and still not have fixity? Why not as well be hanged for a sheep as for a lamb? Any extensive disturbance of the calendar such as Herr Achatz suggests is sure to meet with determined opposition. Why not challenge the opposition once and for all on every front? If the plan proposed by our author were put into effect, after a necessarily long struggle, there would still exist the further need of a calendar with fixed *dates* as well as fixed *days:* and the whole battle would have to be fought all over again.

If it is desirable to narrow down the movability of Easter from 35 to seven days, it is still more desirable to eliminate that movability altogether. If it is desirable to have Christmas and New Year's on the same day each year, it is still more desirable to have them on the same day and the same date. But these things cannot be done without the "supplementary day" idea. Therefore, those favoring regularity and stability in the calendar must above everything study, and discuss, and thrash out, and eventually, let one hope, advocate the supplementary day. And once they advocate it, they will advocate The World Calendar, for this is the only plan proposing the extra day that is receiving widespread and constant support all over the world. The supplementary day is the real core of the question. To eliminate it, to obscure it, to disregard it, is merely to put off the time when we shall have in the calendar a regularity that is really regular and a fixity that is really fixed.

CURRENT PRESS COMMENT

Leap Year

Philadelphia Inquirer

The year 1940 may conceivably be the last Leap Year we ever shall have in the style to which we are accustomed. There is a strong international move on foot to alter our calendar and to change the structure of leap years. There is wide recognition of the need for a new calendar and most of the nations of the world are in favor of having a new one.

Business and commerce today are seriously inconvenienced by the vagaries of our calendar and the bulk of support for the movement to alter it comes from business men and institutions. Labor organizations also are in favor of change.

A Fixed Easter

London Observer

This year was one of the few occasions on which an extremely early Easter was not a source of irritation. The victims of strain and war pressure are glad of a "break" under any sort of conditions. Neither religion nor history confers any sanctity on the system by which the festival takes its place in the calendar. The arrangement rests on an elaborate convention ingeniously devised by a medieval Pope to reconcile the dependence of the Jewish Passover on the full moon with the fact that such fullness varies from one degree of longitude to another. The "Ecclesiastical Full Moon" of our English Prayer Book is an orb that never was on land or sea. Its invention was a concession to mundane convenience which we are quite entitled to imitate and mend.

A fixed Easter would mean a most useful simplification of the calendar in the interests of practical life. The worlds of business, law, and education would all be relieved of an irritating irregularity.

Calendar and Life

Buffalo (N. Y.) Courier-Express

We are living in an epochal period in history, an era of great portent, a period of transition which doubtless will go down in the records as one of the most revolutionary. There have been major calendar changes in the past. The books are not closed. The World Calendar plan or some other on the same or improved order, despite the derisive comments of the conservatives, may yet regulate the coming and going, the sleeping and waking, the work and business and the holidays of our children and children's children until the distant day when another calendar reform may make even The World Calendar plan seem ancient and cumbersome.

Return to Simplicity

Ann Arbor (Mich.) News

Everything from the conduct of business to the pursuit of pleasure would be easier under a calendar like The World Calendar. In a world which sometimes bewilders because of its increasing complexity, the proposed World Calendar is a gratifying return to simplicity. It might be impossible for all the nations of the world to agree at the outset on even a reform so uncontroversial as a calendar. But if the United States should show the way, other countries would soon follow.

Our Haywire Holidays

Goshen (N. Y.) Democrat

The World Calendar, although it would still leave something to be desired in regard to holiday revision, would be a vast improvement over our present calendar system. It would make for several holiday improvements, and we would at least know the holidays would occur the same days each year and could plan for them accordingly. With such a calendar in operation, we could then proceed to revise our holiday set-up without undue difficulty.

A wholesale revision of our major holidays, wherein we could derive from them the best benefits of leisure, would be a godsend to everyone. It's nothing short of "wacky" to continue celebrating holidays which break into the normal scheme of life without any authoritative reason.

EXCERPTS AND REVIEWS

Timepiece

ETHEL KING

In *The New York Times*, March, 1940

All the plans to reckon time
Are somewhere stamped with the sublime.
There is wonder in the ways
Men devise to count life's days—
Hour-glass, sun-dial, the clock's tick tack,
Calendar and almanack.
Stars and heavens, seasons, tides,
These are the computer's guides.
Nothing strange that high design
Traffics with this coinage fine,
For time is the admission fee
To the super-show, eternity.

Time of Adoption

ELISABETH ACHELIS

Address in connection with the opening of the September, 1940, lecture at the Hayden Planetarium entitled "Sky Clocks and Calendars."

WE have just heard a most interesting talk on "Sky Clocks and Calendars," and have seen, or will see before we leave, the exhibition of pictures which are on view on the first floor, depicting the early history of the calendar and the proposed new World Calendar of 12 months and equal quarters.

The important fact which directly concerns us, is when can this calendar be placed in operation. Obviously the transition should be easy when a day, date and month of the present calendar coincide with the same day, date and month of the new one. This coincidental day occurs Saturday, December 30, 1944. The following day and date in the old calendar, Sunday, December 31, 1944, would then become the new World-Holiday, that extra or double Saturday, the new "Year-End Day" —and The World Calendar would begin on Sunday, January 1, 1945.

The Eastern Hemisphere today is unhappily in the throes of war, so that the Western Hemisphere would be the logical place and the United States the country to take the lead in calling the international conference for the purpose of putting The World Calendar into operation.

Many government departments already favor it, among them being the United States Naval Observatory and the Division of Weights and Measures of the United States Department of Commerce. And were the State Department and the President properly impressed with its importance and significance they would call an international conference to meet in Washington, in 1942 or not later than 1943. Such a conference is certain to be effective in bringing nations closer together through the common-bond-of-time and would be a great influence toward establishing greater world cooperation.

Future history may well record that the *year* of the international conference and the *year* when The World Calendar was put into practical use were highly significant ones for civilization. Our generation is given an unusual opportunity to contribute toward a new era of good will through the adoption of the perpetual World Calendar of 12 months and equal quarters.

I Am The Calendar

An interesting item discovered by Charles Schaer of San Juan, Puerto Rico.

I have two missions: one of utility, one of sentiment.

I am the symbol of time, combining the past, the present and the future.

All the world looks at me, talks about me, and regulates its business and social life by me.

No letter is ever written, no book ever published, no money ever coined, that does not bear my imprint. I am the one thing that the world must constantly consult.

I ask for display space in your place of business or your home. In return I guarantee to be useful, and I hope to be decorative.

I admit that in that space I will constantly work for Rolph-Clark-Stone, Limited, telling you and your friends who they are, where they are and what they have to sell.

I am one of their salesmen, anxious to impress you favorably and to remind you tactfully on each day of the year that my employers value your business.

But I am more—I am their ambassador of good will. I carry their best wishes for your health, happiness and prosperity to you, their friend.

The Struggle Against Routine

By Senor J. O. Mariotti

In *La Vanguardia*, Buenos Aires, Argentina, February, 1940

THE practical consequences of every kind which the adoption of the perpetual World Calendar would bring about are easy to imagine. Order would soon be achieved in the occurrence of the holidays, and there would be an end to "on what day will Lent, or Christmas, or Epiphany fall? etc."—with its resultant advantages.

If we consider the evident advantages which this calendar presents with respect to world-wide uniformity in the systems of chronological notation, it would seem strange that its application has not yet been initiated. This is so as a result of the accumulation of traditions and customs which have become rooted in the spirit of the peoples, forming habits difficult to eliminate. Tradition and habit exert a great influence on many things; but as everything is changing, it is to be hoped that in this case, as in others, they will yield to the renovating impulse of science, so that the perpetual calendar may soon be adopted universally to note the illusory intervals of the time that is passing.

This Changing World

By Frank Parker Stockbridge

THERE aren't, of course, any reasons except sentimental ones for celebrating any holiday on any particular date. That isn't to say that sentimental reasons are not often as good as or better than logical reasons. Tradition, habit and custom count for so much in human affairs that efforts to change them meet with resistance, sometimes too powerful to be overcome.

Thus a great number of people felt outraged when President Roosevelt proclaimed last year November 23 as Thanksgiving Day instead of the traditional last Thursday in November, and half or more of the state governors followed public sentiment and proclaimed the 30th as the day of thanks. Of course, since each state is a law unto itself, and neither Thanksgiving Day nor any other day is in strict sense a national holiday, since Congress has never enacted a statute, and probably can't, compelling the observance of any day as a holiday everywhere, each state can do as it pleases about Thanksgiving, and so can the President; the only legal force of a Presidential holiday proclamation is to make it compulsory in the District of Columbia, the Territories and Island possessions of the United States.

There isn't any but a sentimental reason, therefore, why Thanksgiving shouldn't be observed on the fourth Monday in November, instead of the last Thursday*; and that is one of the ideas put forward by Miss Elisabeth Achelis, founder of The World Calendar Association. Such a change would give us another three-day week-end, at any rate—and why not?

Under The World Calendar plan, the the fourth Monday in November would always fall on the 27th, just as each day of the week in any given month would always fall on the same date. To folk who put sentiment and tradition above reason and logic there is something almost sacrilegious in tinkering with the calendar. But it's been done not once but many times.

There isn't any reason why it shouldn't be changed again. There probably would be a great revolt against changing Christmas Day to any date but December 25, which would always fall on Monday under the calendar reform plan. There is actually no historical record to prove that Jesus was born on that particular day or any other definite date. The early Church paid little attention to Christmas. Three or four hundred years after the Crucifixion some of the churches began to celebrate the birth of Our Lord, on different dates. It was not until the Sixth Century that the date of December 25 was agreed upon as appropriate and adopted by the Church.

*Editor's Note: The World Calendar Association favors the fourth Thursday in November for Thanksgiving. After the adoption of the permanent World Calendar the change to a fourth Monday could be easily made should people desire it.

FROM THE MAIL BAG

I am glad, indeed, to have my name associated with something in which I believe so much.—Wm. Adams Brown, D.D., Union Theological Seminary, N. Y.

The information furnished by your Association will be shared with students and faculty at Springfield College.—Dr. Albert Z. Mann, Springfield College, Mass.

There is a great deal to be said for the changes which your Association is sponsoring. I am sure that the universal adoption of a fixed and exact year would be well worth while.—Mark Woods, Treas., Nat'l Broadcasting Co., N. Y. C.

I am constantly impressed with the enormous and unnecessary complexity of all of our work, with monthly indexes and seasonal cycles, which is unnecessarily imposed upon us by the present disorderly calendar.—Walter Mitchell, Jr., Dun and Bradstreet, N. Y. C.

Personally I heartily and enthusiastically endorse The World Calendar and I am sure its adoption would be welcomed by all colleges and universities which each year have so much trouble making schedules with the existing system.—Dr. C. E. ZoBell, Assistant Director, The Scripps Institution of Oceanography, Univ. of Cal.

It is a most regrettable thing that we should have been so slow to appreciate the great value—both in a general practical way, and even socially—of the proposed World Calendar; considering that it can be so readily adapted to every need of all sections of people of all nationalities throughout the world.—D. G. Stead, Watson's Bay, N. S. W., Australia.

We have decided to drop the 13-month calendar, being convinced now that your plan is far and away the best.—Fr. Gordon Krahe, Editor, *Franciscan Almanac*, Washington, D. C.

The proposed World Calendar has many advantages over our present calendar and deserves world interest and recognition.—The Rev. G. K. Andeen, Providence, R. I.

I agree that "the adoption of a World Calendar might well have a definite influence in the bettering of international relations."—Dr. R. Whitaker, Los Gatos, Cal.

There are practical advantages in and no considerable objection to the proposed calendar change.—The Rev. W. A. Aiken, Auburn, N. Y.

Calendar reform seems inevitable. For efficiency and convenience there should be some change.—Charles B. Paine, Atty., Lincoln, Neb.

"Contenders for Time's Honors," by Professor F. W. Adams is in many ways one of the most informing contributions ever made to your valuable magazine on the history of calendar changes.—The Rev. G. F. Hubbartt, Columbia City, Ind.

The World Calendar is useful and worth while.—R. M. MacIver, Columbia Univ.

It is evident there is an increasing momentum to The World Calendar.—C. Reynolds, Editor, *Office Equipment*, Chicago.

Hope general approval and action may come soon.—The Rev. F. W. Backemeyer, Gary, Ind.

I see great values in the new calendar and wish you the best of fortune in bringing about its final consummation.—The Rev. E. W. Foster, Racine, Wis.

I shall continue as I have in the past to be a booster for this change, which is so greatly needed by the business world and is so long in being fulfilled.—R. C. Perkins, Adohr Milk Farms, Los Angeles.

The calendar should be made for man, not man for the calendar—The Rev. C. F. Unger, Readington, N. J.

Your movement is fighting for the acme of consistency and more power to you.—C. N. Ottosen, Atty., Salt Lake City.

There is no possible dogmatic objection against calendar reform and there is the most weighty precedent in the Gregorian calendar. I wish you success.—Prof. W. Lutoslawski, Krakow, Poland.

I believe The World Calendar to be the correct reform and one that ought to come soon.—K. K. Tibbetts, Supt. of Public Schools, Wheaton, Ill.

I am in sympathy with the objectives of your Association.—Dr. E. G. Mears, Dir. of Summer Quarter, Stanford Univ.

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EDITORIAL PARAGRAPHS

There is continual agitation for a better and more logical calendar. Some day it may get somewhere.—New York *News.*

A fixed Easter would mean a most useful simplification of the calendar in the interests of practical life.—London (England) *Observer.*

The World Calendar is in keeping with the solar year and the seasons. Shifting holidays are stabilized.—San Francisco (Cal.) *Commercial News.*

Calendar reformers hope that this year will be the last in which February will have to bear the burden of four years' accumulated "overtime."—Boston (Mass.) *Christian Science Monitor.*

Calendar reformers claim that their new system of dividing the year would make printed calendars almost unnecessary.—Philadelphia (Pa.) *Evening Public Ledger.*

Only once in the memory of anybody under 84 has Easter fallen earlier than it was this year.—London (England) *Everybody's Weekly.*

Growing sentiment for calendar reform is reported from agricultural states.—Fort Worth (Tex.) *Morning Star-Telegram.*

Reform of the calendar has exercised the minds of religious bodies, astronomers, mathematicians, scientists, governments, business men for centuries.—Melbourne (Australia) *The Age.*

Those who never seem to get around to doing many of the things that need to be done should be grateful for the extra day which the calendar and Father Time have provided in allowing this February 29 instead of the usual 28 days.—Roanoke (Va.) *Times.*

Selling The World Calendar idea to the whole civilized world looks like a pretty big job, we'll admit, but its sponsors feel that the thing can be done in time to put the calendar into effect in 1945.—Fairmont (W. Va.) *Times.*

The curious wanderings of Easter are set forth in the Book of Common Prayer, which lists the dates of Easter for a period from 1786 to 2013.—Hopkinsville (Ky.) *New Era.*

The World Calendar plan is being studied seriously throughout the world.—Royal Oak (Mich.) *Daily Tribune.*

The wanderings of Easter bring yearly confusion to the Church calendar as well as to the textile trade,to the horticulturist, to the travel business, to hotel accommodations and transportation schedules, as well as to education and vacation plans.—Hagerstown (Md.) *Herald.*

The World Calendar would facilitate statistical comparison and would stabilize holidays. The transition from the Gregorian to the new calendar could be made without any complications whatever.—Prague (Czechoslovakia) *Vesmir.*

It is contended that a more uniform calendar, with the same day of the week always occurring on the same day of the month, would simplify bookkeeping, payrolls and permit more satisfactory arrangement of days off.—Chillicothe (Ohio) *News Advertiser.*

Perhaps after the war it will be possible to achieve unity on the proposal to have a fixed Easter.—Heckmondwike (England) *Herald.*

It may be that those people who now celebrate their birthdays every four years because of an idiosyncrasy in our calendar will yet live to hold an annual celebration like the rest of us.—Kelso (Wash.) *Kelsonian.*

The World Calendar plan, which is rapidly receiving international recognition and which already has the approval of 14 governments, rearranges the length of the familiar 12 months.—Willmar (Minn.) *Tribune.*

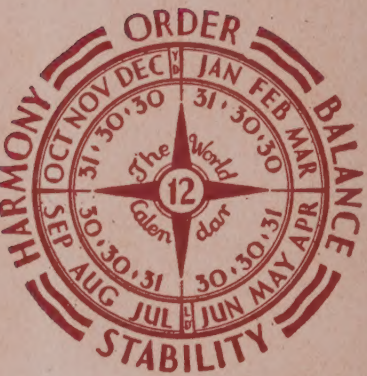
Calendar reform would make the calendar symmetrical and in keeping with the solar year and the seasons.—Alton (Ill.) *Telegraph.*

The benefits to business and the individual alike are readily appreciated when the new calendar is studied.—Lovell (Wyo.) *Chronicle.*

Business would welcome the tidying up of the calendar.—Harrisburg (Pa.) *News.*

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